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UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Agricultural Economics

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INVENTORY OF REPORTS AND RESEARCH STUDIES,  
COMPLETED AND IN PROGRESS, RELATING TO ADJUSTMENTS  
OF POPULATION TO RESOURCES IN THE  
NORTHERN GREAT PLAINS STATES

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By Neil W. Johnson and Orval E. Goodsell

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INTRODUCTION

This inventory has been compiled in response to a request from the Land Committee of the National Resources Board, for available information which might aid in answering, for the Northern Great Plains States, the following questions:

1. The best type or types of land utilization.
2. The size, or range in size, of operating units requisite for carrying on the type or types of land utilization determined upon.
3. The optimum population capacity on the basis of (1) and (2).
4. The redistribution in population, if any, called for by the findings with respect to (1), (2), and (3).
5. The governmental and other measures necessary to carry out the readjustments found to be needed in land use and in the distribution of population.

In preparing the inventory an attempt was made to appraise all published and unpublished studies and those in progress by research and operating agencies that might aid in determining for specific areas the information asked for in the above questions.

Relatively few studies have dealt, or are dealing, with all these items in a comprehensive way. Even some of the early work in this area, however, presents evidence of importance on one or more of the above points. For this reason, an effort has been made to examine and include all relevant research studies in these states since 1920.

The work may be divided into two major types, (1) the published and unpublished studies of State and Federal research agencies, and (2) the largely unpublished reports which have been used as the basis of action programs since 1933. These latter contain a limited amount of original research, but for the most part are attempts to draw together

from all available sources existing information for the guidance of operating agencies.

The quality of the research studies varies widely. Statements as to best size or sizes of operating units may, for instance, be based on (1) the present condition and trends in size of farm as shown by census data; (2) farmer's opinion as to best size; (3) case studies of successful farms in an area; (4) budget studies of various sizes and types of organization; or (5) studies of the organization and operation of large numbers of actual farms in an area.

To facilitate a quick appraisal of the amount and quality of information now available or likely to be available in the near future, an attempt has been made to present as much of these data as possible in both tabular and map form, together with such qualifying remarks as may be necessary. Much of the information now available in reports of operating agencies does not readily lend itself to such treatment. As a consequence, these data are described in separate exhibits for each agency.

Portions of these data were tabulated in the field offices of the Divisions of Farm Management and of Land Economics. As a consequence, it has been impossible for the committee working in Washington to examine all the items listed and to determine the degree of uniformity used in judging whether the information in each study was "specific" or "general" on the five points under consideration.

In general the committee feels that evidence is available from a sufficient number of sources to determine the desirable major land uses for most areas in the Northern Great Plains, and to indicate what are the minimum desirable sizes of operating units for the various types of farming conducted. A limited amount of careful testing of these recommended



sizes might still be done to make doubly sure of their ability to weather through the extremes to which Great Plains farming is subjected.

Many of the studies enumerate measures which must be undertaken to achieve stability on individual farms and a few take into consideration the effect of these individual readjustments on the economy of the entire area under study. Measures needed in readjustment are advanced rather definitely for fairly large areas in some of the later studies. As the area under consideration is broken down into subareas or communities this definiteness tends to disappear. It would seem that more work could well be done in examining the application of general measures to specific localized areas.

A final step which is largely lacking is that of detailing the agencies and establishing the machinery through which recommended measures may actually be effected. A considerable amount of study is still needed to bridge this gap between the proposal of measures and the operating program in localized areas.

Relatively few, and only the more recent studies have given much thought to the present population of an area in relation to its proper balance with resources. Possibly this is the field needing the greatest amount of attention at the present time. Measures for readjustment previously proposed for local areas may need reconsideration in the light of this appraisal.

The generous assistance of personnel of the following agencies in supplying data, and giving final clearance for information included herein is greatly acknowledged: Division of Project Organization, S. C. S., Division of Cooperative Relations and Planning of S. C. S., Division of State and Local Planning of BAE, and The Washington and Regional offices of the Divisions of Land Economics and Farm Management and Costs of BAE.



#### STATEMENT BY THE AUTHORS

Attached is a copy of the outline, "Proposed Special Studies, Northern Great Plains," prepared by the Land Committee of the ~~National~~ Resources Committee which resulted in the inventorying of available research with which this report is concerned.

There is also included a copy of an outline, "Suggestions for the Development of an Agricultural Program in the Great Plains." This outline was prepared by a committee consisting of Roy Kimmel, E. A. Starch, and Sherman E. Johnson, at the request of the Chief of the Bureau of Agricultural Economics. This outline was to be used as the basis of discussion of research in the Northern and Southern Great Plains Regions.

Since some similarity exists between these endeavors, the authors have thought it desirable to include a statement comparing the viewpoints suggested in these two outlines.



PROPOSED SPECIAL STUDIES, NORTHERN GREAT PLAINS  
(In complementary relationship to proposed studies  
in the Pacific Northwest)

(Suggested by the Land Committee of the National Resources Committee)

I. Objectives.

1. To determine the facts with respect to recent (1930-38) emigration from the region, immigration into it, and movements of people from one part to another of it, and, in the light of those facts and other relevant widespread data, to forecast prospective movements of people from, into, and within the region in the near future (say 1939-44).
2. To select several representative unit areas for intensive studies of means of stabilizing within them a population of optimum density at an appropriate standard of living.
3. To determine throughout each selected area (a) the best type (or types) of land utilization; (b) the size (or range in size) of operating units requisite for carrying on the type or types of land utilization determined upon; (c) the optimum population capacity on the basis of (a) and (b); (d) the redistribution in population, if any, called for by the findings with respect to (c); and (e) the governmental and other measures necessary to carry out the readjustments found to be needed in land use and in the distribution of population.



II. Special role of Committee and Regional Counselor.

1. Procurement of services of competent investigators through loan or through allocation of funds for their employment.
2. Designation of criteria for selection of areas for intensive study, such as:

- (a) Availability of relevant basic data (as in Heart Basin).
- (b) Inclusion of irrigable area of considerable size, grazing land, dry-farming land, etc., to give interrelated potentialities.
- (c) Reasonable size.
- (d) Quality of representativeness.
- (e) Degree of complexity.
- (f) Relative prospects of state and local cooperation in carrying out an action program based on the findings of the studies and on resultant recommendations of the Northern Great Plains Committee.

Doubtless the investigators should deal with the selected areas one at a time, - one area after another. Meanwhile, Federal and State agencies doubtless could collect basic data on other areas.

3. Formulation and prosecution of an action program to bring about the readjustments in land use and population distribution decided upon as desirable in the areas studied.



### III. Note

It is probably only by the development of unified programs of readjustment in selected areas that the States and the Congress can be brought to adopt realistic policies and procedures in line with the physical facts and economic situation in the Northern Plains.



## SUGGESTIONS FOR THE DEVELOPMENT OF AN AGRICULTURAL PROGRAM IN THE GREAT PLAINS

(Developed by a committee appointed by the Chief of the Bureau of Agricultural Economics; Roy Kimmel, E. A. Starch, Sherman E. Johnson)

A. The objective of programs of action in the Great Plains should be to achieve a measure of stability and security in a region where production hazards are extreme. Measures which will reduce economic risks in agriculture can be classed under the following heads:

1. The return of crop land which is unsuited for arable farming to permanent vegetation.
2. Shifting from poorly adapted systems of farming to types of production better adapted to the resources of a given area.
3. Adjustment in the size of farm units where necessary to establish self-supporting operating units.
4. Introduction of practices which will permit best possible use of existing resources.
5. Adjustments of indebtedness to conform with earning capacity of the area.
6. Adjustments in population distribution.
7. Adjustment of public services and organization to meet the needs of the area at a cost the area can support.
8. Modification of existing tax and tenure legislation to facilitate desirable changes.

B. A number of agencies are now operating intensively in the Plains Region. The approach now needed is:

1. To shape the objectives of existing programs so that they will contribute most to the economic stability of the Region.
2. To coordinate activities so that each program will supplement the activities of all others.
3. So to localize efforts of different agencies that the greatest emphasis will be placed in areas where a particular program will be most effective.
4. To appraise activities of the various programs and to measure their contribution to the central objective.



C. A general report on the Great Plains problem has been completed. A program for the Bureau of Agricultural Economics in cooperation with other agencies would now include:

1. Working out coordinated programs for all action agencies in selected counties.
2. Working out specific changes in action programs to meet special problems and local situations.
3. Further study of special problems on which we lack adequate information for formulating an action program.

## II

### Determining Objectives and Directing Programs

- A. County planning groups working from the existing background information on types of farming and land use can provide judgments as to the need for localizing particular programs geographically, and emphasizing certain aspects of programs in particular localities. Because problems in the Great Plains, such as that of restoration land, are more acute in some areas than in others, and because different procedure under the same program may be desirable, some localization other than that provided by area studies is needed. The selection for planning activities of counties in which particular problems are present or for which area studies are not now available would materially aid the problem of locating particular problems.
- B. A partial answer to the problem of coordinating different activities will be found in the results of county planning. The analysis of special problems will likewise provide some aid to coordination. However, actual experience in fitting together the activities of different programs in one locality can be gained through observations in "experimental" counties. Furthermore, the measure of the contribution of each major action agency to the central objective of stabilizing agriculture can best be made if the "experimental" counties are selected so that the work of each major action agency in each region is represented by one of the selected counties.

The counties selected should represent:

1. An intensive land purchase area -  
In a county where the Land Purchase Program is a major activity, the central adjustment problem should be defined. Plans should be developed for the administration of purchased lands either by the organization of grazing districts or by the development of individual permits. In any case a plan for administration should be developed so that the activities of the AAA, S.C.S., F.S., F.S.A., F.C.A. can contribute



most to the development of a stable agriculture. This would probably call for emphasis on the restoration land program, reseeding, grazing control, and the development of grazing-farming units.

2. An area where wind erosion hazards and the activities of a soil conservation district are of major importance. In such a county the effectiveness of the district as a means of bringing about changes in land, changes in practices and their bearing on economic and social problems as well as on physical problems can be made. The emphasis of the AAA might be either on restoration land, changes in crops, or on improvement in crop and grazing practices. The influence of the other agencies, particularly Water Facilities, working through the conservation district can be measured.
3. An area where the unit farm reorganization project of the S.C.S. and F.S.A. is under way. In this situation the purchase program, activities relating to land tenure, the program of the AAA, and F.S.A. and Water Facilities development could be pointed toward the development of individual units of economic size and type for the area.
4. An area where the restoration land phase of the AAA is important. This problem could be observed in counties not affected by a purchase or unit reorganization program to appraise the value of the restoration program (a) in areas where the margin of cultivation has been receding and (b) in areas where only scattered tracts of poorer land would be affected. The grant program of the F.S.A., the crop loans of the F.C.A., the tax rates within the county and crop insurance would all have a bearing on the retirement of land by individuals.
5. An area where the improvement of water facilities will further the stabilization of agriculture. The AAA, F.S.A., and S.C.S. programs have a direct contribution to make to the development of these facilities.
6. An area where the contribution of a number of agencies are of nearly equal importance -  
In such areas the relation of the objectives of the AAA, S.C.S., F.S.A., and Crop Insurance may be particularly important.

### III

#### Direction of Specific Phases of Different Programs

In addition to studies which will provide information to all agencies and which will provide a basis for evaluating different programs, the Bureau of Agricultural Economics should study in cooperation with the agency concerned specific phases of particular action programs.



Some suggested lines of activity are:

1. Appraisal of the income expectancy on grant case farms of the Farm Security Administration as a basis for the development of alternative approaches to this problem.
2. Development of means of handling restoration land for permanent retirement in definitely submarginal farming areas.
3. Determining the contribution of a Water Facilities Program to adjustments to systems of farming with greater income stability.
4. Outline definite approaches to the administration of public lands, including
  - (a) Land purchase lands
  - (b) Division of grazing lands
  - (c) Lands foreclosed by Farm Credit Administration
  - (d) Tax reversion lands
  - (e) State school lands, etc.
5. Appraise practices recommended for soil and water conservation in relation to possibility for stabilizing crop production and farm income.
6. Appraise influence of AAA system of payments on tenancy and hired labor.
7. Study the influence of crop practices on the variability of crop yields and its relation to crop insurance.

#### IV

#### Special Problems

A number of problems bearing on the objectives and the administration of any agricultural program, but which can be studied as special problems can be listed. Some of these topics have a bearing on immediate adjustments, others have particular interest in relation to long-time programs, or are of such nature that considerable time is needed in developing a corrective program for a given situation. Under this heading can be listed (A) those calling for immediate attention and (B) those, equally important, but which can be taken up as a part of a regular research program.

#### A. Problems on which information is needed now.

1. An appraisal of the "unit reorganization" program of the F.S.A. and S.C.S. in the Southern Plains from the standpoint of:

- (a) Income expectancy and the ability of farmers on reorganized units to survive drought and depression periods.
    - (1) Effect of tenure and duration of leases on the reorganization.
    - (2) Effects of recommended cropping and range practices on productivity.
    - (3) The effect of feed reserves on stability of income.
    - (4) The size of unit needed for different types of farms in different localities.
  - (b) The effect of such reorganization on the community pattern and on economic and social institutions.
  - (c) The geographic and institutional limitations which would give this type of reorganization an advantage over the grazing district type of reorganization developed in the Northern Plains.
2. The potential contribution of crop insurance to stability of farm income from the standpoint of:
- (a) cash returns in drought and wet years.
  - (b) encouragement of practices designed to reduce hazard.
  - (c) effect on needed land use adjustments.
3. The extension of crop insurance to crops other than wheat.
4. The development of a plan which would provide for flexible premium payments, much larger premiums being paid in years of large income and smaller payments in years of low income.
5. The problem of restoring submarginal crop land to grass.
- (a) The economics of seeding permanent grasses.
  - (b) Means other than by direct purchase of land to effect the permanent retirement of submarginal crop land.
6. The influence of type of owner, tenure and rate of taxation on land use.
- (a) The possibility of affecting or stabilizing land use through differential tax rates varied according to land use.



- (b) Possibilities of amending laws to facilitate public acquisition of tax titles at low public cost (action in rem and Torrens Act system of title guarantee by court action)
- 7. Social implications of economic changes particularly in regard to
  - (a) ways and means of guiding migration and reducing mobility of populations particularly when it leads to resettlement of previously distressed areas.
  - (b) the effect of public assistance (in place) on migration and on normal movements of population.
- 8. The use of the soil conservation district as an instrument to bring about desirable social and economic adjustments and to prevent the reversal of desirable trends in years of favorable weather.
- B. Problems for which a body of information should be gradually built up.
  - 1. Needed adjustments in local governmental organization and public finance.
    - (a) Direction and degree of desirable reorganization, abandonment or consolidation of governmental units, or transfer of functions.
    - (b) Laws and institutional factors which have a bearing on governmental reorganization.
      - (1) Laws affecting consolidation
      - (2) Local attitudes regarding autonomy
      - (3) Present local public indebtedness
      - (4) Present and potential grants in aid
      - (5) Equalization of taxes
      - (6) Present systems of taxing public utilities and other inter-governmental properties
    - (c) Tax reversion lands
      - (1) Extent of actual reversion, where land is in public ownership and not taxed.
      - (2) Potential reversion, where the State or county could take title but has not done so.

- (3) Nominal reversion where present laws do not permit the taking of a defensible tax title.
2. Determination of the institutional agencies and services which a given area can support and the influence of these on the level of living of residents.
3. The development of types of ranch units and systems of ranch management that will survive drought periods,
  - (a) on private lands where no public land is available.
  - (b) Combining the use of private lands with forest reserves and public domain.
  - (c) The economics of reseeding ranges.
  - (d) Coordination of policies of Federal and State agencies controlling grazing land.
4. The effects of weather variability on crop yield expectancy.
5. The influence of income variability on levels of living.
6. The effectiveness of local credit institutions and the feasibility of developing cooperative financial and merchandising institutions which would build up reserves in good years and extend credit in years of low income.
7. The development of credit instruments and practices that would provide for flexible payments of interest and amortization on farm indebtedness.
8. Methods of effectively using water facilities and resources which are already in an area or which can be developed for an area.
9. Determine protective provisions necessary to the conservation and utilization of ground water and take steps to protect this resource.
10. An evaluation, through county planning groups and special surveys, of the acuteness of adjustment problems by areas. This should locate geographically the particular problem and indicate the priority of different special limited programs.
  - (a) Evaluate opportunities for the use of land in each area where permanent land use adjustments should be made in view of the need for adjustments between grain and ranching areas.
  - (b) Evaluate opportunities for adjusting size of units and systems of farming.



- (c) Inventory the opportunity for making greater use of present water facilities and locate and develop areas which can, by the development of facilities, care for more people.
- (d) Determine the complementary relationship between uplands (grazing areas) and productive valley lands (as winter feed base, headquarters, and public service centers.)
- (e) Studies of particular problem areas such as the James-Missouri rivers territories of the Dakotas and the distressed wind-eroded area in the Southwest.

A Comparison of the Great Plains Outline, "Suggestions For the Development of an Agricultural Program in the Great Plains", with the outline of the Land Committee of the National Resources Board, "Proposed Special Studies-Northern Great Plains"

While the language in these two programs is somewhat different, the objectives apparently have a great deal in common. The Bureau of Agricultural Economics program looks to county planning activities as a major support in the work. This is not mentioned in the National Resources Board outline where proposed studies are spoken of as being carried on by competent technicians.

The BAE outline is set up on the basis of experimental counties selected to represent certain definite adjustment problems, i.e., an intensive land-use-purchase area, a wind-erosion area, a farm-reorganization area, a restoration-land area, a water-facilities area. Major contributions in the experimental or unit areas the NRB proposes to study are selected primarily on the availability of relevant basic data and on interrelated potentialities of irrigated, dry farming, and grazing lands. They also take into consideration the degree of complexity of the problem represented and the probability of State and local cooperation in carrying out an action program as a result of the study.

The BAE outline goes much more specifically into an enumeration of the types of problems which may need investigation in a given local area. The anxiety of BAE people to develop a unified program having the support



of both farmers and operating agencies has resulted in an outline which tends somewhat toward preoccupation with the mechanics involved in getting the wheels properly meshed.

The NRB outline looks beyond these details to the ultimate objectives of a program of readjustment and devotes possibly too little thought to the intermediate steps in the process.

In view of the very considerable amount of data now available on local areas as a result of research studies of BAE and various operating agencies, care must be exercised that these two programs are integrated to avoid duplication of effort and consequent waste of time and money.

STUDIES PREPARED LARGELY BY RESEARCH AGENCIES



# Research Studies Relating to Adjustment of Population to Resources in the Northern Great Plains States

Number of report	Title of study	Agency making the study	Authors	Date	Nature of information available on questions: 1/				
					1	2	3	4	5
	MONTANA								
1	Completed (Published) Farm Adjustments in Montana Study of Area VII - Its Past, Present, and Future 2/	BAE and Mont.Agr. Exp.Sta.	Neil Johnson	1928-35 period covered: Pub.1939	S	S	S	S	S
2	Farm Organization as Affected by Mechanization 3/	Mont.Agr. Exp.Sta. and BAE	E. A. Starch	1933	N	S	N	N	N
3	Montana Land Ownership (State-wide)	Mont.Agr. Exp.Sta.	R. R. Renne	1936	S	N	N	N	S
4	Economics of Range Sheep Production in Montana 4/ (State-wide)	Mont.Agr. Exp.Sta.	M.H.Saunderson	1935	N	S	N	N	N
5	Cattle Ranching in Montana 4/ (State-wide)	Mont.Agr. Exp.Sta.	M.H.Saunderson	1937	N	S	N	N	N
6	Significance of Ownership Pattern to Land Use Planning 5/ (State-wide)	Mont.Agr. Exp.Sta.	R. R. Renne	1935	S	S	N	N	G
7	Conservation of Montana's Irrigated Land 6/	Mont.Agr. Exp.Sta.	P.L.Slagsvold & H.H.Lord	1937	S	S	N	N	N
8	Production Requirements and Costs on Irrigated Farms in Montana 7/ (State-wide)	Mont.Agr. Exp.Sta.	Slagsvold and Clyde Howard	1937	N	N	N	N	N

1/ Questions corresponding to the numbers above are: (1) Best types of land use; (2) Best size of operating unit; (3) Optimum population capacity; (4) Present population compared to optimum; and (5) Needed measures of adjustment. "S" - Specific information; "G" - General information; "N" - No information.

Note: See pages 31-32 for footnotes 2 to 34.

Continued

Research Studies Relating to Adjustment of Population to Resources in the Northern Great Plains States - Continued

Number of report	Title of study	Agency making the study	Authors	Date	Nature of information available on questions: 1/				
					1	2	3	4	5
9	Lease Value of Montana's Range Land <u>8/</u> (State-wide)	Mont. Agr. Exp. Sta.	Saunderson & H.C. Dolster	1935	N	G	N	N	N
10	Range Land Values and Valuation: <u>9/</u> (State-wide)	Mont. Agr. Exp. Sta.	M.H. Saunderson	1934	N	N	N	N	N
11	How Big is a Profitable Ranch? <u>10/</u> (State-wide)	No. Rocky Range Exp. Sta.	L. C. Hurtt	1934	N	S	N	N	G
12	Income and Factors in the Range Sheep Industry <u>11/</u> (State-wide)	Mont. Agr. Exp. Sta.	-	1931-32	N	N	N	N	N
13	Income and Factors in the Range Beef Industry <u>12/</u> (State-wide)	Mont. Agr. Exp. Sta.	-	1931-32	N	N	N	N	N
14	Land Use Adjustments in the Buffalo Creek Grazing District: in Yellowstone County, Montana: <u>13/</u>	BAE	Marshall, Voelker, Starch	1939	S	N	G	N	S
15	Completed (Unpublished) Farm Adjustments in Montana Study of Area IV - Its Past, Present, and Future <u>2/</u>	BAE and Mont. Agr. Exp. Sta.	M. Clawson, M. Saunderson, N. Johnson	1928-35 period covered: To be pub. 1940	S	S	S	S	S

1/ Questions corresponding to the numbers above are: (1) Best types of land use; (2) Best size of operating unit; (3) Optimum population capacity; (4) Present population compared to optimum; and (5) Needed measures of adjustment. "S" - Specific information; "G" - General information; "N" - No information.

Note: See pages 31-32 for footnotes 2 to 34.

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Research Studies Relating to Adjustment of Population to Resources in the Northern Great Plains States - Continued

Number of report	Title of study	Agency making the study	Authors	Date	Nature of information available on questions: 1/				
					1	2	3	4	5
16	Report to Great Plains Committee (Revised) <u>14/</u>	-	-	1937	S	S	N	N	S
17	Tenure Status of Farm Operators by Counties, Montana, 1935 <u>15/</u> (State-wide)	BAE	-	1935	N	N	N	N	N
18	Grades of Farming and Grazing Lands by Counties <u>16/</u> (State-wide)	Mont. Agr. Exp. Sta.	-	-	N	N	N	N	N
19	Study of Montana State Grazing Districts in Relation to Land Purchase <u>17/</u> (State-wide)	IU RA	A. Roth, Jr.	1936	S	G	G	G	S
20	Agricultural Adjustment and Livestock Production in the Northern Great Plains Region <u>18/</u> (State-wide)	Mont. Agr. Exp. Sta.	M.H. Saunderson	1936	N	N	N	N	S
21	In Progress Farm Adjustments in Montana Study of Area III - Its Past, Present, and Future <u>2/</u>	BAE and Mont. Agr. Exp. Sta.	O.A. Parsons W. Johnson	1928-35 period covered	S	S	S	S	S
22	Farm Adjustments in Montana Study of Area V - Its Past, Present, and Future <u>2/</u>	BAE and Mont. Agr. Exp. Sta.	-	1928-35 period covered	S	S	S	S	S

1/ Questions corresponding to the numbers above are: (1) Best types of land use; (2) Best size of operating unit; (3) Optimum population capacity; (4) Present population compared to optimum; and (5) Needed measures of adjustment. "S" - Specific information; "G" - General information; "N" - No information.

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# Research Studies Relating to Adjustment of Population to Resources in the Northern Great Plains States - Continued

Number of report	Title of study	Agency making the study	Authors	Date	Nature of information available on questions: 1/				
					1	2	3	4	5
23	Farm Adjustments in Montana Study of Area VI - Its Past, Present, and Future 2/	BAE and Mont. Agr. Exp. Sta.	-	1928-35 period covered	S	S	S	S	S
24	Farm Adjustments in Montana Study of Area I, Its Past, Present, and Future 2/	BAE and Mont. Agr. Exp. Sta.	-	1928-35 period covered	S	S	S	S	S
25	Study of Rural Population Movement in Montana 19/ (State-wide)	IU RA	-	1936	N	N	N	N	N
26	Types of Ranches and Operating Practices 20/ (State-wide)	Mont. Agr. Exp. Sta.	Saunderson & D.E. Richards	1931	N	S	N	N	G
27	<u>NORTH DAKOTA</u> Completed (Published) Types of Farming in North Dakota (State-wide)	N. Dak. Exp. Sta. USDA	F.F. Elliott J.W. Tapp R.E. Willard	-	S	S	N	N	S
28	Some Farming Changes in Southwestern North Dakota, 1922 to 1925	N. Dak. Exp. Sta. USDA	Rex F. Willard	1926 Pub. 1930	G	S	N	N	N
29	Range Organization and Management in Western North Dakota 21/	N. Dak. Exp. Sta.	M.B. Johnson	1926-28	S	S	N	N	G

1/ Questions corresponding to the numbers above are: (1) Best types of land use; (2) Best size of operating unit; (3) Optimum population capacity; (4) Present population compared to optimum; and (5) Needed measures of adjustment. "S" - Specific information; "G" - General information; "N" - No information.

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# Research Studies Relating to Adjustment of Population to Resources in the Northern Great Plains States - Continued

Number of report	Title of study	Agency making the study	Authors	Date	Nature of information available on questions: 1/				
					1	2	3	4	5
30	Farm Cost and Farm Organization: (State-wide)	Agri. Ext. Exp. Sta.	Rex E. Willard	1923	G	G	N	N	G
31	Fact Finding for Northwestern Dakota Farming 1908 to 1924	N. Dak. Agr. Exp. Sta.	A. C. Kuenig	1925	S	N	N	N	S
32	Interpretation and Analysis of AAA Range Conservation Program, Range Survey Data for Fierce Co., No. Dak.	Co-op. West. Range Survey	-	1937	S	S	N	N	S
33	An Economic Study of Farming in Southwestern North Dakota	Agr. Exp. Sta. & BAE	R. E. Willard; L. A. Reynoldson	1924	S	S	N	N	N
34	Land Utilization in North Dakota (State-wide)	IU RA	C. H. Plath	1935	S	S	N	N	G
35	Land Use Problems in Southwestern North Dakota	IU RA	Stanley Wilner	1937	S	S	S	S	G
36	Irrigation in North Dakota (State-wide)	N. Dak. State Planning Bd.	Oscar Becker	1937	S	G	N	N	S
37	A Plan of Water Conservation for North Dakota, Volume V (State-wide)	N. Dak. State Planning Bd.	-	1937	S	G	N	N	S
38	Conservation and Use of Soil Moisture at Mandan, N. Dak.	USDA	J. C. Thysell	1938	S	N	N	N	S

1/ Questions corresponding to the numbers above are: (1) Best types of land use; (2) Best size of operating unit; (3) Optimum population capacity; (4) Present population compared to optimum; and (5) Needed measures of adjustment. "S" - Specific information; "G" - General information; "N" - No information. Continued

Note: See pages 31-32 for footnotes 2 to 34.

# Research Studies Relating to Adjustment of Population to Resources in the Northern Great Plains States - Continued

Number of report	Title of study	Agency making the study	Authors	Date	Nature of information available on questions: 1/				
					1	2	3	4	5
39	Economic Information Relating to North Dakota (State-wide)	West N. Dak. Com.	-	1937	S	S	G	G	S
40	Cattle Ranching and Range Utilization in Western North Dakota	N. Dak. Agr. Exp. Sta. BAE and BAI	M. B. Johnson R. D. Jennings	1937	S	S	N	N	G
41	Present Land Use in Morton County, North Dakota	LU RA	C. H. Plath	1936	S	N	N	N	N
42	Natural and Economic Factors Affecting Rural Rehabilitation: Problems in Southwestern North Dakota (as typified by Hettinger County, N. Dak.)	WPA BAE	H. L. Stewart	1936	S	S	S	S	S
43	Natural and Economic Factors Affecting the Possibility of Closer Settlement in the Red River Valley in Eastern North Dakota (as typified by Traill County)	WPA BAE	H. L. Stewart	1936	S	S	S	S	S
44	Natural and Economic Factors Affecting Rural Rehabilitation: in Central North Dakota (as typified by Sheridan Co., N. Dak.)	WPA BAE	H. L. Stewart	1936	S	S	S	S	S

1/ Questions corresponding to the numbers above are: (1) Best types of land use; (2) Best size of operating unit; (3) Optimum population capacity; (4) Present population compared to optimum; and (5) Needed measures of adjustment. "S" - Specific information; "G" - General information; "N" - No information.

Note: See pages 31-32 for footnotes 2 to 34.

Continued



# Research Studies Relating to Adjustment of Population to Resources in the Northern Great Plains States - Continued

- 25 -

Number of report	Title of study	Agency making the study	Authors	Date	Nature of information available on questions: 1/				
					1	2	3	4	5
45	Natural and Economic Factors Affecting Rural Rehabilitation: Problems in Northwestern North Dakota and Northeastern Montana (as typified by Divide County, N. Dak.)	WPA BAE	H.L. Stewart	1936	S	S	S	S	S
46	Completed (Unpublished) The Relation of Soil Character as Expressed by Certain Soil Types to the Choice Land for Grazing in Mixed Prairie of North Dakota	IU RA	A.P. Nelson	-	S	N	N	N	S
47	Land Utilization of Problem Areas in North Dakota (State-wide)	National Res. Bd.	C.H. Plath	1936	S	G	N	N	S
48	SOUTH DAKOTA Completed (Published) Economic and Social Survey of Buffalo County, South Dakota	S.D.Pl.Bd.& Buffalo Co. Pl.Bd.	-	1935	G	S	N	N	N
49	Some Land Use Problems in Northwestern S. Dak. 22/	BAE	Muehlbeier & Johnson	1937	S	G	N	N	G
50	An Economic Study of Farms in the Spring Wheat Area of South Dakota	Agr. Exp. Sta. BAE & BAI	C.M. Hampson and Paul	1934	G	G	N	N	N
	Dakota		Christophersen:						

1/ Questions corresponding to the numbers above are: (1) Best types of land use; (2) Best size of operating unit; (3) Optimum population capacity; (4) Present population compared to optimum; and (5) Needed measures of adjustment. "S" - Specific information; "G" - General information; "N" - No information.

Note: See pages 31-32 for footnotes 2 to 34.

Continued

Research Studies Relating to Adjustment of Population to Resources in the Northern Great Plains States - Continued

Number of report	Title of study	Agency making the study	Authors	Date	Nature of information available on questions: 1/				
					1	2	3	4	5
51	Land Use Problems	St. Pl. Bd.	T. H. Cox	1937	S	S	N	N	N
52	Natural and Economic Factors Affecting Rural Rehabilitation Problems in Central South Dakota (as typified by Hyde County)	WPA BAE	H. L. Stewart	1936	G	G	G	S	G
53	In Progress Adjustment of Agriculture to Environment in Central South Dakota 23/	BAE & Agr. Exp. Sta.	-	1939	S	S	S	S	S
54	Farm Management Study in the Tri-County Conservation District 24/	BAE	-	1939	S	S	S	S	S
55	NEBRASKA Completed (Published) Study of Rural Rehabilitation in Nebraska (State-wide)	NERA	L. A. White	1935	G	S	S	N	S
56	Nebraska Farm Tenancy - Some Community Phases (State-wide)	BAE U. of Nebr.	J. O. Rankin	1923	N	N	S	S	S
57	Farm Relief and Rehabilitation Problems in the Loess Hills of Central Nebraska (as typified by Sherman Co.)	WPA BAE	R. S. Kifer	1936	S	S	S	S	S

1/ Questions corresponding to the numbers above are: (1) Best types of land use; (2) Best size of operating unit; (3) Optimum population capacity; (4) Present population compared to optimum; and (5) Needed measures of adjustment. "S" - Specific information; "G" - General information; "N" - No information.  
Note: See pages 31-32 for footnotes 2 to 34.

Continued

# Research Studies Relating to Adjustment of Population to Resources in the Northern Great Plains States - Continued

Number of report	Title of study	Agency making the study	Authors	Date	Nature of information available on questions: 1/				
					1	2	3	4	5
58	Economic Benefits of Irrigation: from Kingsley (Keystone) Reservoir	Univ. of Nebr.	F. Miller H.C. Filley	1937	S	S	S	S	S
59	The Relation of Size of Farm to: Tax, Labor, Improvement, and Other Farm Expenses in Nebr. (State-wide)	Univ. of Nebr.	L.F. Carey R.V. Hecht	1937	N	S	N	N	S
60	Nebraska's Population (State-wide)	Nebr. State Plan. Bd.	-	1937	N	N	S	S	S
61	Land Use Problems in Nebraska (State-wide)	Univ. of Nebr.	G.E. Condra	1934	S	N	N	N	N
62	Geological Phases of Soil Erosion Investigation and Control in Nebraska (State-wide)	Univ. of Nebr.	G.E. Condra	1934	S	N	N	N	S
63	Land Classification of the Central Great Plains, Part 2	USDI Geo. Survey	J.Q. Peterson R.E. Morgan	-	S	N	N	N	S
64	Land Classification of the Central Great Plains, Part 1	USDI Geo. Survey	W.R. Greenslett	-	S	N	N	N	S

1/ Questions corresponding to the numbers above are: (1) Best types of land use; (2) Best size of operating unit; (3) Optimum population capacity; (4) Present population compared to optimum; and (5) Needed measures of adjustment. "S" - Specific information; "G" - General information; "N" - No information.

Note: See pages 31-32 for footnotes 2 to 34.

Continued



Research Studies Relating to Adjustment of Population to Resources in the Northern Great Plains States - Continued

Number of report	Title of study	Agency making the study	Authors	Date	Nature of information available on questions: 1/				
					1	2	3	4	5
65	Conditions in the Southwest Area Which Affect the Rehabilitation Program (as typified by Perkins Co., Nebr.)	WPA BAE	H.M. Pevehouse	1936	S	S	S	S	S
66	Land Use Planning in Southwest Nebraska	RA	A. Anderson R. Hecht	1937	S	G	N	N	G
67	Conservation of Land and Water Resources in Nebraska (State-wide)	Univ. of Nebr.	G.E. Condra	1936	S	N	N	N	S
68	Background Data of Region VII (State-wide)	RA	J. Lowenstein	1937	S	S	S	S	S
69	Land Use Planning, Boone County, Nebraska	BAE, FSA, AAA, FCA, U. of Nebr.		1938	S	S	N	N	S
70	Completed (Unpublished) Nebraska Land Use Report (State-wide)	RA	A. Anderson	1936	S	N	N	N	S
71	Land Use and Classification in Keyapaha County, Nebr. 25/	U. of Nebr. USDA	-	-	S	S	N	N	G
72	Land Use and Classification in Dawes County, Nebraska 26/	U. of Nebr. USDA	-	-	S	S	N	N	G
73	Land Use and Classification in Sioux County, Nebraska 27/	U. of Nebr. USDA	-	-	S	S	N	N	G

1/ Questions corresponding to the numbers above are: (1) Best types of land use; (2) Best size of operating unit; (3) Optimum population capacity; (4) Present population compared to optimum; and (5) Needed measures of adjustment. "S" - Specific information; "G" - General information; "N" - No information. Note: see pages 31-32 for footnotes 2 to 34.

Continued

# Research Studies Relating to Adjustment of Population to Resources in the Northern Great Plains States - Continued

Number of report	Title of study	Agency making the study	Authors	Date	Nature of information available on questions: 1/				
					1	2	3	4	5
74	Land Use and Classification in Boyd County, Nebraska	U. of Nebr. USDA	-	-	S	S	N	N	G
75	WYOMING Completed (Published) Profitable Systems of Farm and Ranch Organizations for Certain Areas in Wyoming 28/	Wyo. Agr. Exp. Sta.	A. F. Vass H. Pearson	1935	N	S	N	N	N
76	Completed (Unpublished) Land Use Adjustment in the Spring Creek Area 29/	LU BAE	R.L. Spurlock S.M. Lingo	1938	N	N	N	N	S
77	In Progress Profitable Systems of Farm and Ranch Organizations for Dry Land Areas of Wyoming 30/ (State-wide)	Wyo. Agr. Exp. Sta.	A. F. Vass	1936	N	S	N	N	N
78	Classification and Discussion of Dry Farming Areas 31/	Wyo. Agr. Exp. Sta.	H. Pearson	-	N	N	N	N	S
79	Readjustments Necessary for Problem Areas 32/	Wyo. Agr. Exp. Sta.	H. Pearson	-	N	N	N	N	S
80	Preliminary Report of Area Program Planning in Campbell County, Wyoming 33/	Wyo. Agr. Exp. Sta.	H. Pearson	1937	S	S	G	G	S

1/ Questions corresponding to the numbers above are: (1) Best types of land use; (2) Best size of operating unit; (3) Optimum population capacity; (4) Present population compared to optimum; and (5) Needed measures of adjustment. "S" - Specific information; "G" - General information; "N" - No information.

Note: See pages 31-32 for footnotes 2 to 34.

Continued





Research Studies Relating to Adjustment of Population to Resources in the Northern Great Plains States - Continued

Supplemental Remarks

(See corresponding footnote number in preceding pages.)

- 2/ This series covers the dry farming and ranching areas of the entire plains area of eastern Montana. The Area VII study is published as Montana Agr. Exp. Sta. Bull. 367, and the study for Area IV will come from the press early in 1940. Tabulation work is largely completed on Areas I, III, V, and VI, and part of the analysis is in written form. Area III is being written up during the summer of 1939 and should come from the press during the year 1940. In Areas I, V, and VI the unpublished data accumulated to date will go far toward answering questions on best type of land use, best size or sizes of operating units, and discovery of measures needed to bring about adjustment. In these latter areas the final balance between population and resources is a definite objective in the study, but the work has not yet been completed.
- 3/ A careful study based on farming under experimental conditions.
- 4/ Adjustments which are desirable for sheep and cattle ranches are discussed.
- 5/ Ownership of land and minimum size of operating unit.
- 6/ Compares results obtained from different farm management practices in three different areas.
- 7/ List production requirements and costs for various sizes of irrigated farms.
- 8/ Cost of leasing range land, and amount of land necessary per cow and per unit of each type of range land.
- 9/ Method of computing range land values.
- 10/ Reprint from March 1, 1934 issue of The Montana Farmer.
- 11/ Comparison of various types and sizes of range sheep units showing income, profit, cost, etc.
- 12/ Comparison of various types and sizes of range cattle units showing income, profit, cost, etc.
- 13/ An appraisal of land utilization and grazing programs currently operating in the area.
- 14/ Discusses need for and means of land use adjustment.
- 15/ Tenure data copied from U. S. Census 1935, supplemented by charts.
- 16/ Background material classifying dry farm and range land.
- 17/ Discusses desired adjustments in land use in eastern Montana grazing and dry land areas.
- 18/ Adjustment of livestock production in range areas. Taken from Proceedings of Western Farm Economic Association, 9th Annual Meeting, 1936.
- 19/ Discussion of population movements.
- 20/ Compares sizes of operating units and profit possibilities.
- 21/ Concerned with internal adjustments on ranches in this area.
- 22/ The material is indicative but needs more supporting data. Size of farm is based on farmer opinion.
- 23/ An important study now in progress designed to yield definite information on all these factors.
- 24/ This study now in progress is designed to yield definite information on all these factors.
- 25/ Information by tables.
- 26/ Information by tables.

Continued

Research Studies Relating to Adjustment of Population to Resources in the Northern Great  
Plains States - Continued

27/ Information by tables.

28/ Article taken from "Proceedings of the Western Farm Economic Association," 9th Annual Meeting, 1936.  
List desirable budgets for different sizes of operating units.

29/ Contains chart showing extent of and method of adjusting sizes of operating units.

30/ Information by tables.

31/ Adjustments listed pertain to internal farm or ranch organization.

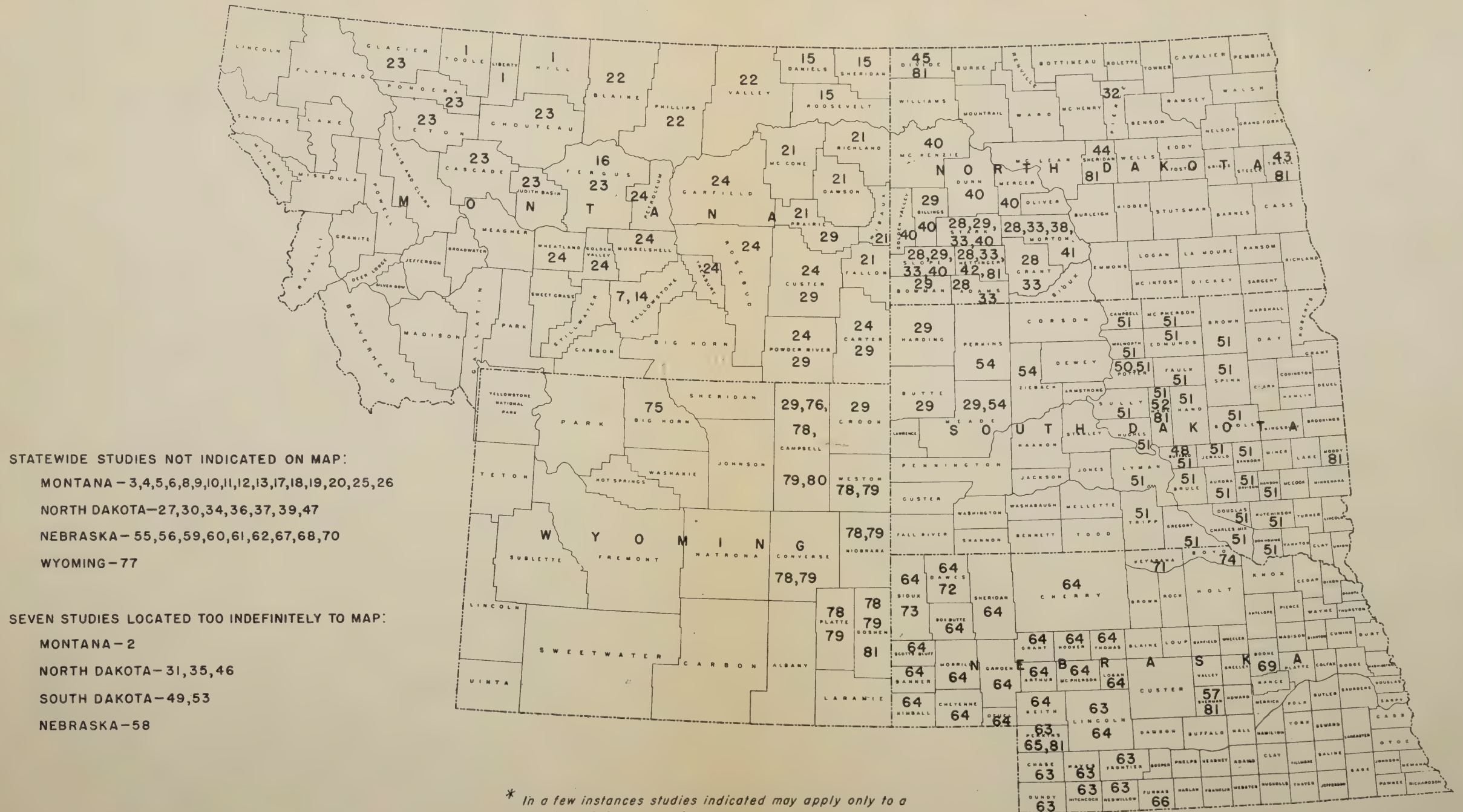
32/ Discussion of conditions on dry land farms.

33/ List desirable readjustments for problem areas.

34/ This study was made in 1935 to determine sections wherein a rehabilitation program was needed, what its requirements were, and possible disposition of farmers displaced. It included 9 sample counties, each being representative of a different type-of-farming area. Most recommendations were general. No attempt was made to determine either a detailed picture of best land use or the maximum population which the area could support. General recommendations were made for land use in each sample county and for minimum desirable size of farm in seven of the nine counties. Population possibilities were considered where minimum sized farms were recommended. Methods of attaining adjustments were advanced, but specific measures and agencies generally were not. Separate reports are available on each of these counties, but the work is mostly included in the one publication as well. This study also includes representative counties in the Southern Great Plains.

# LOCATION OF RESEARCH STUDIES IN THE NORTHERN GREAT PLAINS STATES

SEE PRECEDING TABLE FOR STUDIES CORRESPONDING TO NUMBERS ON MAP \*







GENERAL TREATISES WHICH INCLUDE RELATED MATERIAL OF VALUE





General Treatises Which Include Related Material of Value

Title of study	Location	Agency making the study	Authors	Date	Remarks
<u>MONTANA</u>					
Completed (Published)					
Economic Changes in	N. Central &	Mont. Agr.	<i>E.A. Storch</i>	Pub. 1935	A general treatise on the
Montana's Wheat Area	N.E. Montana	Exp. Sta.		Records cover	organization of wheat farms
				1928-31	in Montana and their evolu-
					tion in response to changes
					in the physical and economic
					environment.
Erosion and Related Land	Roosevelt	SCS	W.C. Boatwright	1933	Contains valuable maps of
Use Conditions - Froid	County				present land use and erosion
Demonstration Project					conditions for this area.
Types of Farming in	S.E. Montana	Mont. Agr.	Virgil D.	1934	Gives a good idea of the dif-
Southeastern Montana		Exp. Sta.	Gilman		ferent types of enterprises
					combined with ranching in
					this area.
Types of Farming in	Entire	BAE and	Neil Johnson	1936	A general treatise showing
Montana	State	Mont. Agr.	M.H. Saunderson		the physical environment and
		Exp. Sta.			economic factors affecting
					Montana agriculture.
Readjusting Montana's	Entire	Mont. Agr.			
Agriculture	State	Exp. Sta.			
I. Need and Basis for		"	R. R. Renne	1935	A group of studies summarizing
Readjustment		"			recent experimental work from
II. Montana Farm Prices	"	"	P.L. Slagsvold	1936	a state-wide angle. Much of
III. Population Resources	"	"	R. R. Renne	1936	the material reported here is
and Prospects	"	"	C.F. Kraenzel		also available in more detailed
IV. Land Ownership & Tenure	"	"	R. R. Renne	1936	form for specific portions of
V. Economic Changes in Mont.	"	"	M.H. Saunderson	1936	the State on request to the
Livestock Production					Montana Agricultural Experiment
VI. Montana's Irrigation	"	"	P.L. Slagsvold	1936	Station at Bozeman, Montana.
Resources					

Continued

General Treatises Which Include Related Material of Value -- Continued

Title of study	Location	Agency making the study	Authors	Date	Remarks
VII. Montana's Dry-Land Agriculture	State	Mont. Agr. Exp. Sta.	E. A. Starch	1936	(See preceding page.)
VIII. Tax Delinquency and Mortgage Foreclosure	"	"	R. R. Penne	1936	"
Analysis of Agriculture on Milk River Irrigation Project	North Central: Montana	"	P. L. Slagsvold	1934	A series of studies which have significance in that they indicate the best sizes of irrigated operating units in different portions of Montana. They also have value in studying the possibilities of resettling submarginal wheat producers and in considering the possibilities of an integrated agriculture with dry farming and range operations as supplemental to an irrigated feed base and living quarters.
Analysis of Present Status of Agriculture on the Sun River Irrigation Project	Central: Montana	"	P. L. Slagsvold	1936	
Analysis of Agriculture on Valier Irrigation Project	Central: Montana	"	P. L. Slagsvold	1936	
Agriculture on the Huntley Project	S. Central: Montana	"	P. L. Slagsvold	1937	
Agriculture on the Flathead Project	Western: Montana	"	P. L. Slagsvold	1938	
Social and Economic Aspects of Irrigation in Montana	State	"	Slagsvold & Mathews	1938	
Planning an Agricultural Program for _____ Counties	Teton, Sheridan, Richland, Gallatin, Fallon, Fergus, Wibaux, Pondera	"	H. G. Bolster	1936	Individual report for each county. Background data showing soils, temperature, rainfall, tenancy, tax delinquency, crop yields, etc.

Continued

General Treatises Which Include Related Material of Value - Continued

Title of study	Location	Agency making the study	Authors	Date	Remarks
General Economic Information on Montana Agriculture	Montana	Mont. Agr. Exp. Sta.	H. G. Bolster	1937	
The Relation of Weather to Crops in the Plains Region	N. Central Montana	"	P. Patton	1927	Background data showing climate and crop yields.
Variation in Annual Precipitation	Montana	"	-	1935	Background data containing precipitation records for all sections.
Ownership Maps	Montana	Mont. Agr. Exp. Sta., WPA, RA	-	1937	County maps showing ownership of all farm land.
Tax Delinquency Maps	Montana	Mont. Agr. Exp. Sta.	-	1936	County maps showing tax delinquency of all farm land.
<u>NORTH DAKOTA</u> <u>Completed (Published)</u> Types of Farming Areas in North Dakota	N. Dak.	USDA	R. E. Willard O. M. Fuller	1927	A good general reference to the agriculture of each county in North Dakota. Census data through 1925 are used extensively.
Farm Reorganization and Management in East Central North Dakota	N. Central N. Dak.	N. Dak. Agr. Exp. Sta. USDA BAE	H. R. Danielson R. S. Kifer	1933	A good reference on farm reorganizations designed to meet present economic and physical conditions.
<u>Completed (Unpublished)</u> Land Tenure Problems in Southwestern North Dakota	N. Dak.	BAE	Marshall Harris	1938	Recommendations apply generally to adjustments in tenancy relationships.

Continued



General Treatises Which Include Related Material of Value - Continued

Title of study	Location	Agency making the study	Authors	Date	Remarks
Erosion and Related Land Use Conditions in the Minot Area	State	SCS	Hollowaychuck and Boatright	1936	Contains valuable maps showing soil type, degree of erosion, land cover and slope for the Minot area
<u>SOUTH DAKOTA</u>					
<u>Completed (Published)</u>					
Cattle Ranch Organization and Management in Western South Dakota	Western S.Dak.	Ag. Ec. Dept. St. College, BAE, BAI	M.B. Johnson	Pub. 1930: 1925-28	Contains suggestions for organization and operation of cattle ranches and use of lands in northeastern South Dakota. Ranch records form the basis of the study.
County Land Management in Northwestern South Dakota	N.W. S.Dak.	S.Dak. Agr. Exp. Sta.	R. J. Penn C. W. Loomer	1938	
Economic and Social Survey of Faulk County, S. Dak.	Faulk County: S.Dak.	State Pl. Board	-	1935	
Land Classification of the Northern Great Plains	Mont., N.Dak., S.Dak., Wyo.	USDI Geo. Survey	A.E. Aldous J.F. Deeds	1929	Shows land classification maps of area west of 100th meridian.
Estimated Returns from Operating 800 Acres in Spring Wheat Area Under Four Different Plans	S.Dak.	St. Exp. Sta. BAI BAE	C.M. Hampson and Poul Christophersen	1934	
Profitable Farming Systems for East Central S.Dak.	E. Central S.Dak.	State Pl. Board	C.A. Bonnen J.B. Hutton	1927	
The People of South Dakota	S.Dak.	State Pl. Bd.	-	1936	
Profitable Farming Systems for the Intensive Spring Wheat Area in S.Dak.	Brown County	Agr. Exp. Sta. BAE, BAI	C.A. Bonnen R.H. Rodgers	1928	A Study of present systems of farming in this area and possible alternatives. Continued

General Treatises Which Include Related Material of Value - Continued

Title of study	Location	Agency making the study	Authors	Date	Remarks
Economic Adjustments on Farms in Southeastern South Dakota	S.E. S.Dak.	BAE, Agr.Exp.Sta.	R.H.Rodgers	1928	: A study of actual farming : systems in operation in this : area and suggested alterna- : tives.
Reconnaissance Survey of Crow Creek Indian Reservation, South Dakota	S.Dak.	SCS, USDA TC-BIA	-	1937	
Types of Farming in South Dakota	S.Dak.	Agr.Exp.Sta. BAE	R.H.Rodgers F.T.Elliott	1929	: A handbook of information on : the nature of agriculture and : farming systems in all por- : tions of the State.
The Farm Family Standard of Living in Codington County, South Dakota	Codington County, S.Dak.	Agr.Exp.Sta. BAE	Zetta Bankert	1935	
Possible Irrigation Area Along the Missouri River in South Dakota	Missouri River, S.Dak.	State Planning Board	-	1937	: Includes 216,000 acres or : 336.5 square miles of desir- : able irrigable land lying : immediately adjacent to the : river; also contains illus- : trated maps showing area of : desirable irrigable lands.
Supplementary Irrigation in Western South Dakota	Western S.Dak.	State Planning Board	-	1937	: Contains table showing irri- : gation activities by South : Dakota county agents, report- : ing kinds and types of irri- : gation with remarks.
<u>NEBRASKA</u> Completed (Published) Tenure and Farm Investment in Nebraska	Nebraska	BAE U.of Nebr.	J.O.Rankin	1925	

Continued

General Treatises Which Include Related Material of Value - Continued

Title of study	Location	Agency making the study	Authors	Date	Remarks
Farm Types in Nebraska as Determined by Climatic, Soil, and Economic Factors	State	Nebr. Agr. Exp. Sta.	R. R. Spafford	1919	A good reference work.
The Environment of the Prairie	Nebraska	Univ. of Nebr.	J. E. Weaver	1931	
The Relation of Drought to Water Use in Nebraska	Nebraska	Univ. of Nebr.	G. E. Condra	1934	
Types of Farming in Nebraska	Nebraska	Univ. of Nebr., BAE	H. Hedges	1936	Contains indicative material for various type-of-farming areas in Nebraska. A good general reference.
Land Transfers in Nebraska	State	Nebr. Agr. Exp. Sta.	L. F. Garey	1928-33 Pub. 1938	Transfers of land are divided into voluntary, distress, and gift classifications and examined for different types of farming and different farming areas.
Factors Determining Type-of-Farming Areas in Nebraska	State	Nebr. Agr. Exp. Sta.	L. F. Garey	1935	General information about present organization and environment of farms in specified sections of Nebraska.
Systems of Farming and Possible Alternatives in Nebraska	Nebraska	Univ. of Nebr.	L. F. Garey	1937	Samples present farm organization in various type-of-farming areas and present possible alternatives. Contains valuable data on crop and livestock trends.

Continued



General Treatises Which Include Related Material of Value - Continued

Title of study	Location	Agency making the study	Authors	Date	Remarks
Economic Aspects of the Cattle Industry in the Nebraska Sandhills	Nebraska	Nebr. Agr. Exp. Sta.	Harold Hedges	1925	: Concerned with the factors : affecting returns on ranches : in the Sandhills area. Con- : tains good background material.
<u>WYOMING</u>					
<u>Completed (Published)</u>					
Type of Farming and Ranching in Wyoming	Wyoming	Wyo. Agr. Exp. Sta.	A. F. Vass H. Pearson B. Hunter	1938	: A general guide to the agri- : culture of Wyoming in local- : ized areas.
Land Classification of Central Great Plains (Southeast Wyoming)	Southeast Wyoming	USDI Geo. Survey	J. F. Deeds D. Faulk and others	-	: Background data showing soil, : climate, crops, vegetation, : etc.
Land Classification of the Northern Great Plains (Wyoming and Montana)	Wyoming	USDI Geo. Survey	A. E. Aldous J. F. Deeds	1929	: Background data showing soil, : climate, crops, vegetation, : etc.
Vegetative Composition, Density, Grazing Capacity, and Grazing Land Values in the Red Desert Area	Southern Wyoming	Wyo. Agr. Exp. Sta.	Vass and Lang	1938	: Estimates the carrying : capacity of Red Desert lands : and indicates the values : which should be placed on : the land for grazing purposes.
An Economic Study of Range Sheep Production in the Red Desert and Adjoining Areas	Southern Wyoming	Wyo. Agr. Exp. Sta.	Vass and Pearson	1927	: A valuable source of back- : ground material on this : ranching area.
Cattle Production on Wyoming Mountain Valley Ranches	Southern and S.W. Wyoming	Wyo. Agr. Exp. Sta.	Vass and Pearson	1933	: A study of the organization : and operation of cattle : ranches based on ranch : records. Contains valuable : foundation material.

Continued

General Treatises Which Include Related Material of Value - Continued

Title of study	Location	Agency making the study	Authors	Date	Remarks
<u>INTER-STATE STUDIES</u>					
<u>Completed (Published)</u>					
The Future of the Great Plains	Covers the entire area in a general way.	Report of The Great Plains Com. appointed by the Pres.	-	1936	A general treatise on problems in the Great Plains. Affords a good understanding of how these problems developed and what lines of action must be followed to obtain desired adjustments. Little specific information is given on local areas.
A Study of Ranch Organization and Methods of Range Cattle Production in the Northern Great Plains Region	S.E. Mont., N.E. Wyo., W. N. Dak., T. S. Dak.	USDA and Exp. Sta. of each State	M.L. Wilson, R.H. Wilcox, G.S. Klemmenson, V.V. Parr	1924	A very good treatise on best types of land use, best size of operating unit and measures needed for stability in ranching areas of these States.
The Western Range	Covers all the area	U.S. Forest Service and other Fed. agencies	-	1936	A detailed source book of general information pertaining to the grazing area and its problems of readjustment.
Index of Research Projects. Vol. II.	Nation-wide	WPA NRC State Pl. agencies	-	1939	Contains some items not listed in this inventory which may be of value.

REPORTS PREPARED LARGELY BY OPERATING AND PLANNING  
AGENCIES AS A BASIS OF ACTION PROGRAMS



REPORTS OF THE DIVISION OF PROJECT ORGANIZATION,  
LAND UTILIZATION, SOIL CONSERVATION SERVICE.

The Division of Project Organization, Land Utilization, Soil Conservation Service has a great deal of unpublished typewritten material in its files dealing with the subjects outlined. The Division has no published data as it is an operating unit rather than a research unit. Therefore, any material which has been gathered is in the nature of supporting material used to justify or assist the planning division in deciding the best type of land utilization, the size of operating units to be developed in the management program, the pattern of land purchase, development program, and necessary adjustments to be made.

The Division of Land Economics acted as a service agency and provided most of the necessary research studies required by the Division of Project Organization. Many of these studies are on file in the Division of Land Economics in the Washington office while others are filed in the regional and project offices.

Most of the typewritten material available in the Division of Project Organization is in the nature of reports such as project proposals, land acquisition plans, development and management plans. These reports often contain statistical material usually from secondary sources but in some cases based upon original studies gathered on survey blanks. For location of areas covered by these reports see the following map. The symbols on this map identify each LU project. Use of these symbols when referring to these reports with the Division of Project Organization will facilitate negotiations. The character of information contained in the reports is about as follows:

I. Purpose of the Projects

Discusses briefly the purposes of the projects, including specific reference to the objectives to be accomplished.

II. Problem areas

Includes in the proposal a problem area map of the state showing the location of the project in relation to the state problem areas as defined by the State Land Use Planning Specialist.

Describes the problem area including a discussion of the pertinent items indicated below and other significant features. These discussions include statistical material to substantiate statements made, and present evidence that a problem exists. Sources of statistical material are indicated.

- A. Climate
- B. Soils, including extent and type of any erosion
- C. Vegetation, turf, or covering
- D. Topography, water resources, water distribution
- E. History and pattern of settlement
- F. Land use, including data as to the per cent of land in farms, not in farms, and extent of farm abandonment, if any
- G. Types of farming
- H. Size of farms, grouped, if possible, according to types of farms
- I. Farm income
- J. Crop yields
- K. Tenure and land ownership
- L. Levels of living
- M. Tax delinquency
- N. Population and population trends
- O. Social and public facilities, such as roads, schools and medical services
- P. Relief load

III. Major cause or causes of the problem

IV. Adjustments in land use which will overcome or alleviate the existing problems

- A. Changes in the land use and agricultural economy of the area such as
  - 1. Changes in the types of farming, i.e., shifts from cash-crop farming to a combination of cash-crop and livestock farming, to livestock farming and grazing, or to a farming and forestry combination, through the establishment of community pastures, community woodlots, community meadows, grazing districts, or individual leases.
  - 2. Changes in the physical and economic size of farms and ranches or in the extent of individual farming and ranching operations.
  - 3. Changes in cropping systems.
  - 4. Changes in kind or intensity of grazing.
  - 5. Provision of an improved basis for part-time or subsistence farming, through the development of supplementary sources of income from handicrafts, forestry, or other work connected with the permanent operation of the project area.
- B. Land acquisition
  - 1. Indicates the need for Federal purchase of land which is "submarginal or not primarily suitable for cultivation" and the extent to which its purchase will facilitate the adjustments proposed.
  - 2. Indicates the types of land that should be acquired to bring about the adjustments discussed, including reference to the pattern of public ownership to be developed.
- C. Development
  - 1. Discusses briefly the type of development program which should be carried out to effect the proposed adjustments.



D. Management and administration

1. Indicates any agencies, Federal or non-Federal, now directing land use adjustment programs or administering public lands in the area. Discusses the character, extent and objectives of the program of such agencies, relating the character and objectives of such programs to the land use adjustment program discussed above.

E. Institutional adjustments

1. Discusses measures of public policy which should be instituted to supplement land acquisition and development to overcome existing maladjustments in land use, indicating how such measures will facilitate the proposed adjustments in land occupancy and use.

Such measures might include

- a. Shifts in the location of families
  - b. Rural zoning
  - c. Public retention of tax reverted land
  - d. Adjustments in taxing procedure
  - e. Adjustments in public facilities (roads, schools, etc.)
  - f. Reorganization of local governmental units
  - g. Discriminating use of public credit to foster an adjustment in the agricultural economy of the area.
  - h. Changes in leasing arrangements
  - i. Soil conservation regulations
  - j. Forest burning regulations
2. Discusses the extent to which the institutional adjustments discussed above are being pursued in existing programs in the problem area. Indicates how successful each has been.



January 8, 1940

Mr. Gilbert White,  
Technical Secretary,  
Land and Water Resources Committee,  
National Resources Planning Board,  
Washington, D. C.

Dear Mr. White:

There are being transmitted to you under separate cover 50 copies of "Inventory of Reports and Research Studies, Completed and in Progress, Relating to Adjustments of Population to Resources in the Northern Great Plains States." This is a revision of the report which was prepared and submitted to you by the Bureau of Agricultural Economics several months ago. It brings into a single document the information contained in the original report, the explanatory notes, and maps showing the location of the areas studied.

Sincerely yours,

Julius T. Wendzel,  
In Charge, Interdepartmental Coordination.

CMF/eam



January 2, 1951

Mr. William H. Hall,  
National Academy of Sciences,  
1200 16th Street, N.W.,  
Washington, D.C.

Dear Mr. Hall:

There are being transmitted to you under separate cover  
50 copies of "Inventory of Reports and Research Studies, Con-  
ducted and in Progress, Relating to Adjustments of Population to  
Resources in the Northern Great Plains States". This is a re-  
vision of the report which was prepared and submitted to you by  
the Great Plains Laboratory, and which was previously  
brings into a single document the information contained in the  
original report, the explanatory notes, and maps showing the  
location of the areas studied.

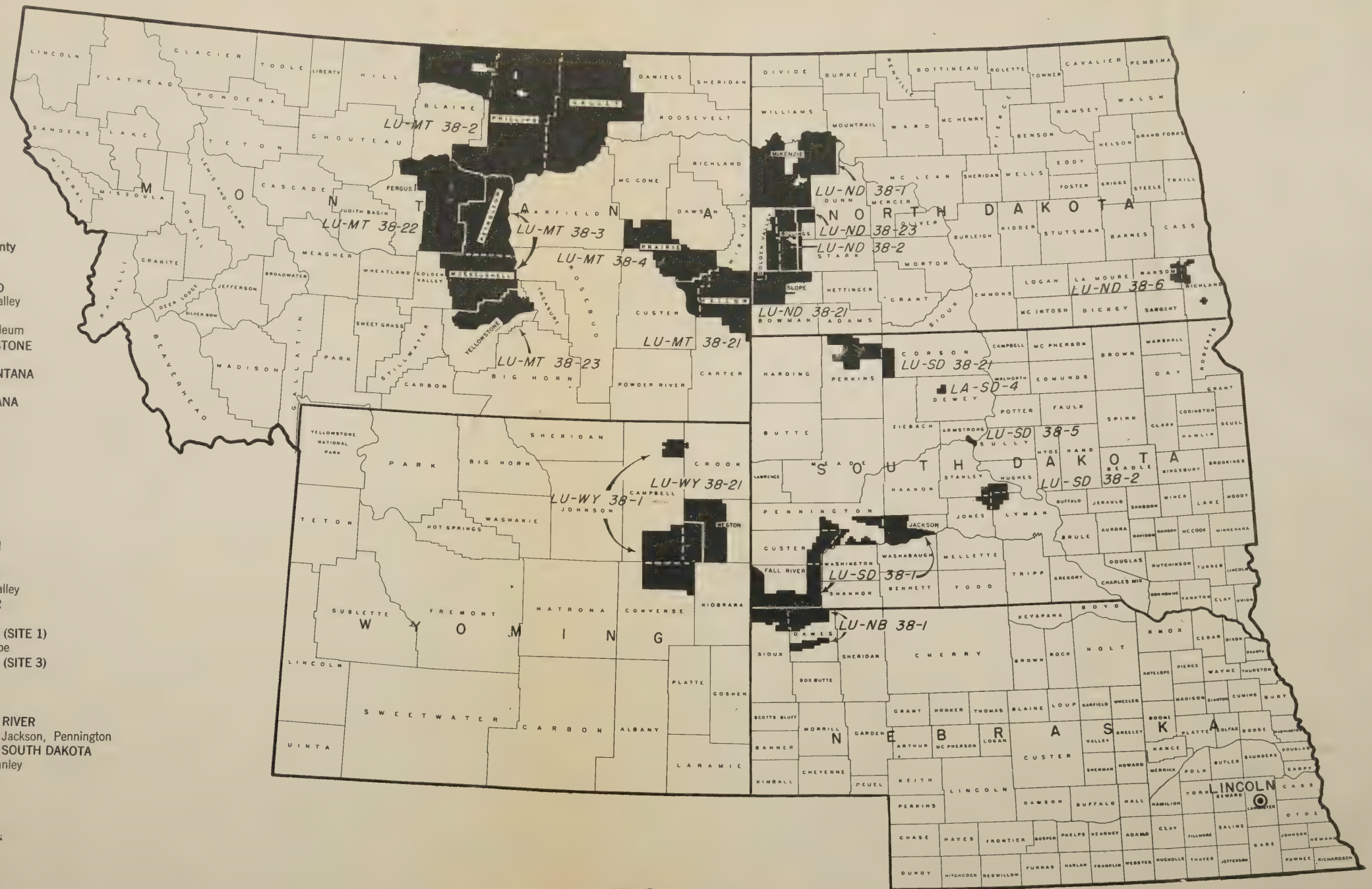
Sincerely yours,

William E. Henshaw,  
in Charge, Interdepartmental Commission.

WHS:am

# AREAS IN THE NORTHERN GREAT PLAINS STATES COVERED BY REPORTS OF THE DIVISION OF PROJECT ORGANIZATION

Project List	
Symbol	Number-Name-County
<b>MONTANA</b>	
LU-MT-38-2	MILK RIVER LAND Blaine, Phillips, Valley
LU-MT-38-3	MUSSELSHELL Musselshell, Petroleum
LU-MT-38-4	LOWER YELLOWSTONE Prairie
LU-MT-38-21	SOUTHEAST MONTANA Custer, Fallon
LU-MT-38-22	CENTRAL MONTANA Fergus
LU-MT-38-23	BUFFALO CREEK Yellowstone
<b>NEBRASKA</b>	
LU-NB-38-1	PINE RIDGE Dawes, Sioux
<b>NORTH DAKOTA</b>	
LU-ND-38-1	LITTLE MISSOURI McKenzie
LU-ND-38-2	LITTLE MISSOURI Billings, Golden Valley
LU-ND-38-6	SHEYENNE RIVER Ransom, Richland
LU-ND-38-21	MISSOURI SLOPE (SITE 1) Golden Valley, Slope
LU-ND-38-23	MISSOURI SLOPE (SITE 3) Billings
<b>SOUTH DAKOTA</b>	
LU-SD-38-1	BAD LANDS-FALL RIVER Custer, Fall River, Jackson, Pennington
LU-SD-38-2	SOUTH CENTRAL SOUTH DAKOTA Jones, Lyman, Stanley
LA-SD-4	LITTLE MOREAU Dewey
LU-SD-38-5	FORT SULLY Sully
LU-SD-38-21	PERKINS CORSON Corson, Perkins
<b>WYOMING</b>	
LU-WY-38-1	THUNDER BASIN Campbell, Converse, Crook, Weston
LU-WY-38-21	NORTHEASTERN WYOMING Weston







REPORTS ON THE SOIL CONSERVATION DISTRICTS WHICH HAVE  
BEEN ESTABLISHED IN THE NORTHERN GREAT PLAINS STATES

Soil conservation district laws have been enacted in all of the Northern Great Plains States except Wyoming. Memoranda of Understanding with the Department of Agriculture have been entered into with six local conservation districts in Nebraska, seven in North Dakota, and five in South Dakota. Part of the procedure of an established soil conservation district beginning its operations involves preparation of (1) a district program setting forth long-time objectives and (2) a district work plan outlining activities immediately proposed for attaining long-time objectives. This program and work plan are prepared by the district governing body, assisted by farmer committeemen, the State Soil Conservation Committee, the Extension Service, the Soil Conservation Service, and other local, State and Federal agencies. These programs and work plans are prepared in general accordance with suggested outlines, copies of which are attached, and contain data relevant to the problem of farm and area adjustment in each local soil conservation district.

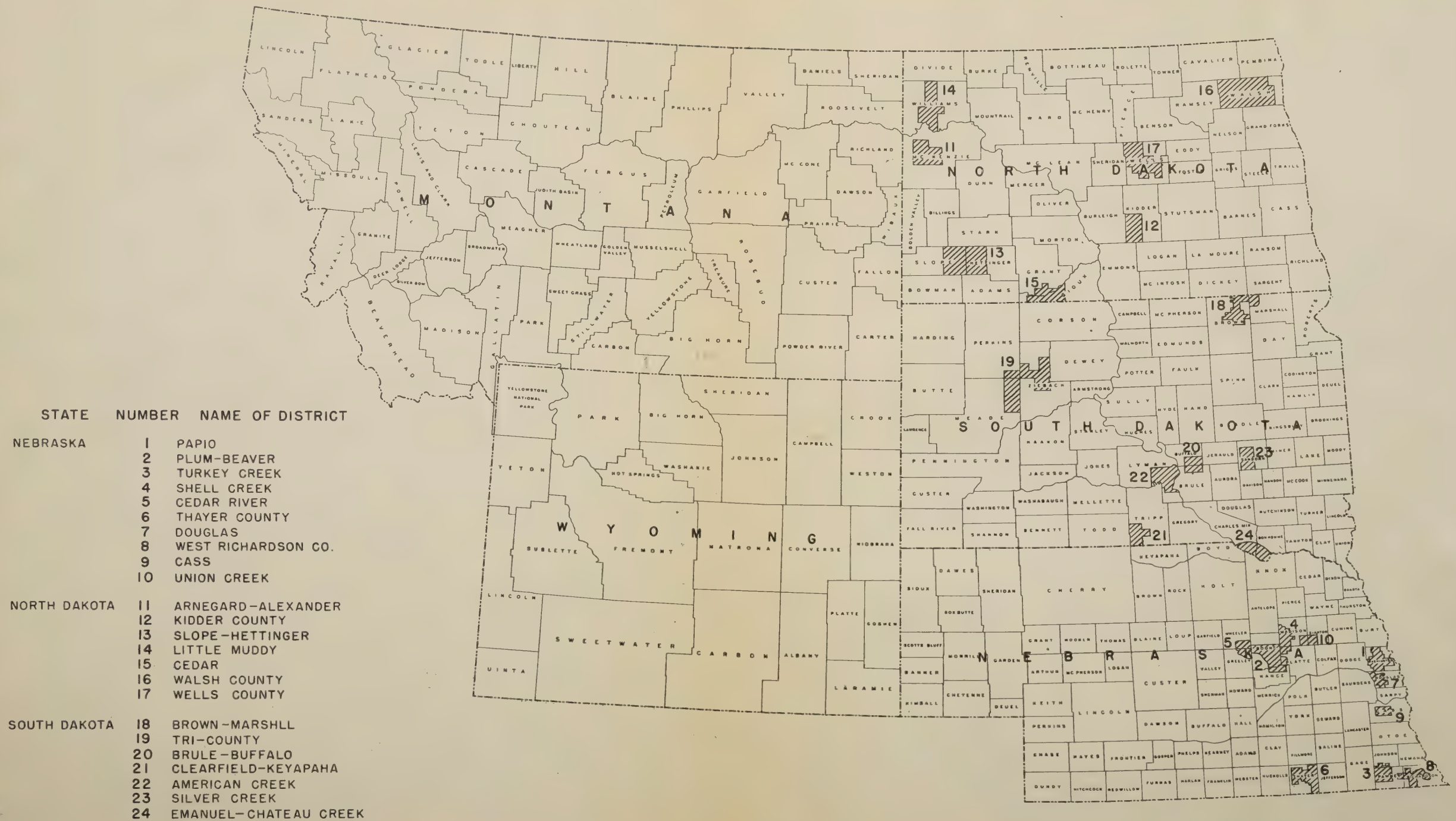
The following table will indicate the districts already established in the Northern Great Plains States most of which have begun operations: (For location of Soil Conservation Districts that have been established in the Northern Great Plains States see following map.)

<u>STATE</u>	<u>NAME OF DISTRICT</u>	<u>LOCATION</u>
<u>NEBRASKA</u>	1. Papio	Part of Washington County
	2. Plum-Beaver	Parts of Boone, Nance & Platte Cos.
	3. Turkey Creek	Parts of Pawnee and Johnson Cos.
	4. Shell Creek	Parts of Madison and Platte Cos.
	5. Cedar River	Parts of Wheeler and Creeley Cos.
	6. Thayer County	Part of Thayer County
	7. Douglas	Douglas County
	8. West Richardson Co.	Parts of Richardson & Pawnee Cos.
	9. Cass	Part of Cass County
	10. Union Creek	Parts of Madison & Stanton Cos.

<u>STATE</u>	<u>NAME OF DISTRICT</u>	<u>LOCATION</u>
<u>NORTH DAKOTA</u>	11. Arnegard-Alexander	Part of McKenzie County
	12. Kidder County	Part of Kidder County
	13. Slope-Hettinger	Parts of Slope & Hettinger Cos.
	14. Little Muddy	Part of Williams County
	15. Cedar	Parts of Grant & Sioux Cos.
	16. Walsh County	Part of Walsh County
	17. Wells County	Part of Wells County
<u>SOUTH DAKOTA</u>	18. Brown-Marshall	Parts of Brown & Marshall Cos.
	19. Tri-County	Parts of Meade, Ziebach & Perkins Counties.
	20. Brule-Buffalo	Parts of Brule & Buffalo Cos.
	21. Clearfield-Keyapaha	Part of Tripp County
	22. American Creek	Part of Lyman County
	23. Silver Creek	Part of Sanborn County
	24. Emanuel-Chateau Creek	Part of Charles Mix & Bon Homme Cos.

The Division of Cooperative Relations and Planning of the Soil Conservation Service can currently give information as to progress in the establishment of soil conservation districts in Northern Great Plains States and can indicate where these data may be consulted.

## LOCATION OF SOIL CONSERVATION DISTRICTS IN THE NORTHERN GREAT PLAINS STATES







Preliminary  
11/8/37

Soil Conservation District  
(Name)  
Office of District Supervisors  
(Town) (State)

### Suggested Outline for Preparation of

#### A SOIL CONSERVATION DISTRICT PROGRAM

A comprehensive statement of erosion conditions, soil conservation problems and recommended changes in land-use and farm practices to provide permanent agriculture in the \_\_\_\_\_ Soil Conservation District.  
-----

- I. The following general description and program has been prepared by district supervisors assisted by farmer committees, State Soil Conservation Committee, Extension Service, Soil Conservation Service, and others.
- II. Legal description and acreage of the District.
- III. General description of District including
  - A. Physical description of district.
    1. Topography
    2. Climate
      - a. Temperature. b. Precipitation. c. Frost data
    3. Soils
    4. General native vegetative characteristics.
  - B. Basic data and information on
    1. Soil erosion conditions and extent by
      - a. Degrees of erosion. b. Present land cover. c. Slopes
      - d. Soil types.
    2. General discussion
      - a. Factual data supplemented by map(s) showing drainage, roads, towns, critical erosion areas, and other pertinent features.
      - b. General conditions on siltation and floods as affecting the district.
    3. Systems of farming.
      - a. Size of farms and range in size. b. Average acreage and yields of principal crops per farm. c. Average acreage and type of pasture and woodland per farm. d. Average kind and number of livestock per farm. e. Average farm income and percentage derived from principal sources. f. General tillage methods.
    4. Percentage of farm tenancy by type and prevailing period of occupancy.
    5. Financial conditions of farmers including tax delinquency, etc.
    6. Land classification data and information, if any available.
    7. Other pertinent information.
- IV. Changes in land-use and cultural practices necessary to control soil erosion and maintain and improve soil productivity.
  - A. Changes in land-use -- physical and economic needs and justification therefor.
    1. Permanent cover on steep and/or eroded land.
    2. Exclusion of livestock from land devoted primarily to production of woods products.

3. Erosion-resisting crops instead of clean-tilled crops on highly erodible lands.
4. Other.
- B. Changes in cultural practices.
  1. Vegetative control.
    - a. Rotations. b. Use of extra seasonal cover crop. c. Strip cropping. d. Vegetated waterways. e. Liming and fertilizing. f. Pasture management. g. Woodland management. h. Wildlife management. i. Utilization of crop residues. j. Other.
  2. Mechanical control.
    - a. Contour cultivation. b. Terracing. c. Contour furrowing or listing. d. Gully control structures. e. Water retardation by spreading. f. Water conservation structures such as small dams. g. Other
- C. Other adjustments desirable to effectuate conservation of soil resources within the district.
- V. Provisions for revision of program for improvement to be made from time to time as experience and additional information indicate needs for such revision.

Approved:

\_\_\_\_\_  
Director, Agricultural Extension Service

\_\_\_\_\_, 193\_\_\_\_  
(State) (Date)

Adopted:

\_\_\_\_\_  
Supervisors of Soil Conservation District.

\_\_\_\_\_  
Chairman

Soil Conservation Service:

\_\_\_\_\_  
State Coordinator

\_\_\_\_\_, 193\_\_\_\_  
(Date)

\_\_\_\_\_, 193\_\_\_\_  
(Date)

Approved:

\_\_\_\_\_  
Regional Conservator

\_\_\_\_\_, 193\_\_\_\_  
(Date)

\_\_\_\_\_  
State Soil Conservation Committee

\_\_\_\_\_  
Chairman

\_\_\_\_\_, 193\_\_\_\_  
(Date)



Preliminary  
11/8/37

\_\_\_\_\_  
(Name) Soil Conservation District  
Office of District Supervisors

\_\_\_\_\_  
(Town) (State)

Suggestions for Preparation of

A SOIL CONSERVATION DISTRICT WORK PLAN

A comprehensive statement of methods and procedures which the \_\_\_\_\_ Soil Conservation District proposes to use in carrying on its work for control and prevention of soil erosion and conservation of soil and soil resources and thereby effectuating its soil conservation program.  
-----

I. Legal description and acreage of the District.

II.

- A. This Soil Conservation Work Plan of the District is prepared to provide for a well-rounded and coordinated plan for the control and prevention of erosion and conservation of soil and soil resources for the entire District by any areas within the district wherein erosion and conservation problems or the solutions thereto are significantly different. The plan includes the following recognized practices: utilization of strip cropping; lister furrowing; contour cultivating; contour pasture furrowing; seeding and planting of waste, sloping, abandoned or eroded lands to erosion-prevention and water conserving plants, trees and grasses; forestation and reforestation; rotation of crops; construction of terraces, terrace outlets, check dams, dikes, ditches and the like; soil stabilization with trees, grasses, legumes, and other thick-growing, soil-holding crops; retardation of run-off by increasing absorption of rainfall; and retirement from cultivation of steep, highly erosive areas badly gullied or otherwise eroded.
- B. This plan has been prepared by district supervisors assisted by farmer committees, State Soil Conservation Committee, Extension Service, Soil Conservation Service, and others.
- C. The functions of the various agencies as set forth in this plan for assisting the district supervisors are suggestive only. Specific commitments of any agency will be covered, if desired, in a separate agreement between such agency and the supervisors of the District.
- D. The cooperative relations between the Agricultural Extension Service and the Soil Conservation Service as set forth in this Soil Conservation District Work Plan are in accord with existing memoranda of understanding.

III. Methods of Treatment According to land use classes.

(Treatment of all land should be based on the kind and degree of erosion, length and steepness of the slope, susceptibility to erosion, and soil type. Detailed determinations as to these factors should be made as the work of the District progresses; however, their general classifications, such as the significance of A, B, C and D slopes, should be pointed out.)

- A. Crop Land. (Includes land now in cultivation, permanent hay, orchards, fallow, special crops, and idle crop land.)
  - 1. Rotations, including cover and protective crops.
    - a. Length of rotation. b. Type of rotation. c. Seed plots.
  - 2. Contour tillage
  - 3. Strip cropping
    - a. Contour rotation strips. b. Buffer strips. c. Permanent strips. d. Field strip cropping. e. Wind strip cropping.
  - 4. Special tillage practices (such as listing and time of plowing).
  - 5. Use of crop residues, trashy fallow and manure.
  - 6. Terracing.
  - 7. Diversion channels.
  - 8. Conversion of land to permanent vegetation including windbreaks.
    - a. Woody plants and seeds. b. Herbaceous plants and seeds.
  - 9. Special treatment, such as methods of applying irrigation water.
  - 10. Fertilization.
  - 11. Others.
- B. Pasture and range land. (It is to be understood that certain of the following items apply only to some parts of the Western regions.)
  - 1. Controlled grazing.
  - 2. Seeding, sodding, fertilizing, and mowing.
  - 3. Contour furrowing or ridging.
  - 4. Water spreading.
  - 5. Development and improvement of stock-watering ponds and storage reservoirs.
  - 6. Supplemental pastures.
  - 7. Salting and bedding practices.
  - 8. Fire prevention.
  - 9. Others.
- C. Woodlands.
  - 1. Planting plans.
  - 2. Woodland management.
    - a. Fire control. b. Controlled grazing. c. Timber stand improvement.
  - 3. Shelterbelts.
  - 4. Others.
- D. Wildlife Areas.
  - 1. Planting plans.
  - 2. Protection and improvement.
  - 3. Others.
- E. Idle or Abandoned Land.
  - 1. Small areas on operated farms.
  - 2. Entire farms.
- F. Treatment necessary because of gully or stream-bank erosion with consideration of conservation measures on adjacent areas.
  - 1. Vegetative and mechanical control.
- G. Road work for erosion control.
  - 1. Vegetative and mechanical.

IV. Supervisor's Methods and Procedures for Effectuating the Work of the District

A. Educational Work

1. Objectives: Sufficient educational work in the district to acquaint farmers within the district with:
  - a. The soil erosion and conservation problems involved and the soil conservation program of the district.
  - b. Plans for properly carrying on the work of the district.
  - c. Progress and results of work within the district.
  - d. Provisions of written agreements embodying individual farm plans to be entered into between the district supervisors and the individual landowners and/or operators.
2. Assistance to Supervisors by:
  - a. State Extension Service through local county agents
    - (1) Assist in scheduling educational meetings pertaining to district's soil conservation program.
    - (2) Assist in obtaining services of subject matter specialists in the Soil Conservation educational work of the district.
    - (3) Sponser, in cooperation with district supervisors, soil conservation tours, field days, etc.
    - (4) Assist with the preparation and presenting of soil conservation exhibits within the district.
    - (5) Help obtain and make use of available educational material and equipment such as film strips, lantern slides, charts, etc., pertaining to soil conservation work.
    - (6) Organize farmer groups for erosion control where necessary and help obtain the interest of existing organizations.
    - (7) Other appropriate assistance.
  - b. Organized farmer groups and committees:
    - (1) Developing sufficient community interest to facilitate the holding of effective group meetings regarding the district's erosion control and soil conservation program.
    - (2) Arrange for proper meeting places including necessary physical set-up, etc.
    - (3) Assist in properly notifying farmers regarding soil conservation educational meetings and activities.
    - (4) Assist in holding tours, field days, etc., pertaining to the soil conservation program.
  - c. State Soil Conservation Committee:
    - (1) Furnish to the supervisors any applicable data and information which it may be in a position to make available.
    - (2) Supply to the supervisors information concerning the State Soil Conservation Districts Law having significance to the soil conservation educational work in the district.
    - (3) Inform district supervisors of the progress of work of other soil conservation districts within the State.
    - (4) Other appropriate assistance.
  - d. The Soil Conservation Service
    - (1) In cooperation with and upon request of the district supervisors and the Extension Service assist in holding necessary educational group meetings, tours, field days, etc.
    - (2) Furnish available educational material, equipment, etc., needed by the district in carrying out the educational phases of its work.



- (3) Assist district supervisors in explaining to groups of farmers provisions of cooperative agreements embodying farm conservation plans entered into between the district supervisors and individual landowners and/or operators.
  - (4) Furnish to the Supervisors any applicable data and other information that it may be in position to make available.
  - e. Other Agencies
    - (1) Upon request of the district supervisors, supply the services of subject matter specialists who may be in a position to give assistance in carrying out the soil conservation educational work of the district.
    - (2) Furnish applicable data and information which they may be in a position to make available.
    - (3) Other appropriate assistance.
- B. Operations (In determining needs and in formulating operation plans of the district as a whole, and segments thereof, efficient use should be made of surveys, data, and other information that may be made available from any source in arriving at a conclusion regarding the extent to which practices set forth in III above are needed to be applied within the district.)
1. Determination of amount and kind of soil conservation work needed within the district.
  2. Formulation of Operation plans.
    - a. District-wide plans setting forth priority of work, shifting and routing of equipment, assigning of work units, etc., based upon needs, interest and other factors existing within individual areas.
    - b. Conservation farm plans included in agreement between district supervisors and individual land owners and/or operators and based upon III above as adapted to the individual farm. Plans for determining priority of formulating such farm plans should be dependent upon such factors as: efficient utilization of resources, needs, interest, desire to cooperate, order of requests, etc.
  3. Assistance to District Supervisors in Planning and Supervising the Execution of Plans.
    - a. Soil Conservation Service

Use of technical personnel that may be made available in:

      - (1) Making necessary surveys
      - (2) Developing and supervising farm conservation plans
      - (3) Serving as technical advisors
        - (a) In improving, from time to time, the District's Soil Conservation program and work plan.
        - (b) On any advisory committee which the district supervisors may create within the district
        - (c) To district supervisors, farmer groups, and individuals in interpreting conservation plans for individual farms.

(Note: Any personnel that the Soil Conservation Service may assign to cooperate with the district will be administratively and technically responsible to that Service and one member thereof will be designated as responsible for such cooperation.)



b. Organized farmer groups and committees

- (1) Plans for cooperating with such farmer groups and committees in executing district-wide plans, area plans, and individual farm plans.
- (2) Plans for assistance in determining priorities for execution of individual farm plans as between areas within the district and between farms within areas.
- (3) Plans for assistance in assigning work units to areas within the district and farms within areas.
- (4) Plans for assistance in routing equipment, etc., to areas within the district and farms within such areas.
- (5) Plans for assistance in getting the proper application and completion of individual farm plans.
- (6) Plans for assistance in securing and checking performance and compliance on cooperative agreements.

(Note: In adopting individual farm plans the farmer should carry out provisions of the farmer-district agreement which indicates revisions in his land-use and farming practices and also provide such labor and materials as set forth in such agreement; should make use of such facilities made available by the district supervisors and as stipulated for in the individual agreement; and should cooperate with personnel assigned by the Soil Conservation Service and other agencies who may render technical assistance in the revision of farming practices and installation of erosion control measures as provided in the agreement.)

c. State Soil Conservation Committee

- (1) Plans for utilizing assistance of the State Soil Conservation Committee in the carrying out of authority of the district supervisor in the execution of the district's adopted and approved program and work plan.
- (2) Plans for wise use of such funds, services, equipment, supplies and materials made available through appropriation by the legislature of the State of \_\_\_\_\_ as is equitably allocated to this District.

d. State Extension Service

- (1) Plans for cooperating with the State Extension Service and others in providing information regarding the adoption of soil conservation practices having a bearing on the execution of the district's work plan.
- (2) Plans for cooperating with the State Extension Service and others in providing information to assist farmers within the district in making adjustments resulting from adoption of a coordinated erosion control plan as set forth in the farm plans.
- (3) Plans for assisting district supervisors, farmer groups and individuals in interpreting farm plans.
- (4) Plans for cooperating with other agencies in recommending revisions in farm plans when such revisions are necessary.
- (5) Plans for assisting district supervisors and committees securing performance on individual farms.

V. Reports

A. The supervisors, with assistance of cooperating agencies, should make necessary semi-annual, annual, and other reports requested by the State Soil Conservation Committee.

VI. Provisions for revision of program for improvement to be made from time to time as experience and additional information indicate need for such revision.

VII. Recognizing the \_\_\_\_\_ Soil Conservation District as a governmental subdivision of the State of \_\_\_\_\_ organized to exercise public powers in the conservation of soil and soil resources and to carry out the powers conferred upon the District supervisors under the provisions of House Bill No. \_\_\_\_ of the \_\_\_\_\_ (State) legislature approved \_\_\_\_\_, 1937, the supervisors hereby adopt this plan for conservation of soil and soil resources and for the control and prevention of soil erosion within the district covering the farms therein.

Approved:

Adopted:

\_\_\_\_\_  
Director, Agricultural Extension Service

Supervisors of \_\_\_\_\_  
Soil Conservation District

\_\_\_\_\_, \_\_\_\_\_ 193\_  
(State) (Date)

\_\_\_\_\_  
Chairman

Soil Conservation Service:

\_\_\_\_\_  
State Coordinator

\_\_\_\_\_  
(Date) 193\_

\_\_\_\_\_  
(Date) 193\_

Approved:

\_\_\_\_\_  
Regional Conservator

\_\_\_\_\_  
State  
Soil Conservation Committee

\_\_\_\_\_  
(Date) 193\_

\_\_\_\_\_  
Chairman

\_\_\_\_\_  
(Date) 193\_

REPORTS RESULTING FROM THE LAND USE PLANNING PROGRAM OF THE  
DEPARTMENT OF AGRICULTURE AND THE LAND GRANT COLLEGES

In many counties of the Northern Great Plains States farmers have been studying local conditions in their relation to problems of farm and area adjustment. Attempts have been made to assemble all available data which might have a bearing on this problem and to interpret it in the light of the experience and best judgment of farmers in the areas in question.

"Intensive" counties are those in which this work has progressed to a stage of area mapping and land classification in accordance with County Land Use Planning Work Outline No. 1, a digest of which is attached. This outline calls for an inquiry into the suitability of particular areas for various uses and makes recommendations as to the types or shifts in land use or adjustments in farming practices, which are thought desirable. As such it concerns itself with many of the problems raised by the Land Committee of the National Resources Committee.

"Unified program" counties are those in which "a first step in the process of translating agricultural land use plans into action and in bringing about the coordination of various types of action programs in the field is being taken. Special attention is given to the particular measures, devices, and lines of public, group, and individual action needed to accomplish the land use, land conservation and rural rehabilitation goals or plans formulated under the area mapping and classification work. Likewise, farmer participation is encouraged in building agricultural programs, in revising and coordinating the several national, state, and local programs where desirable, and in formulating such new programs for agriculture as are necessary to best achieve the desired adjustments in the area.

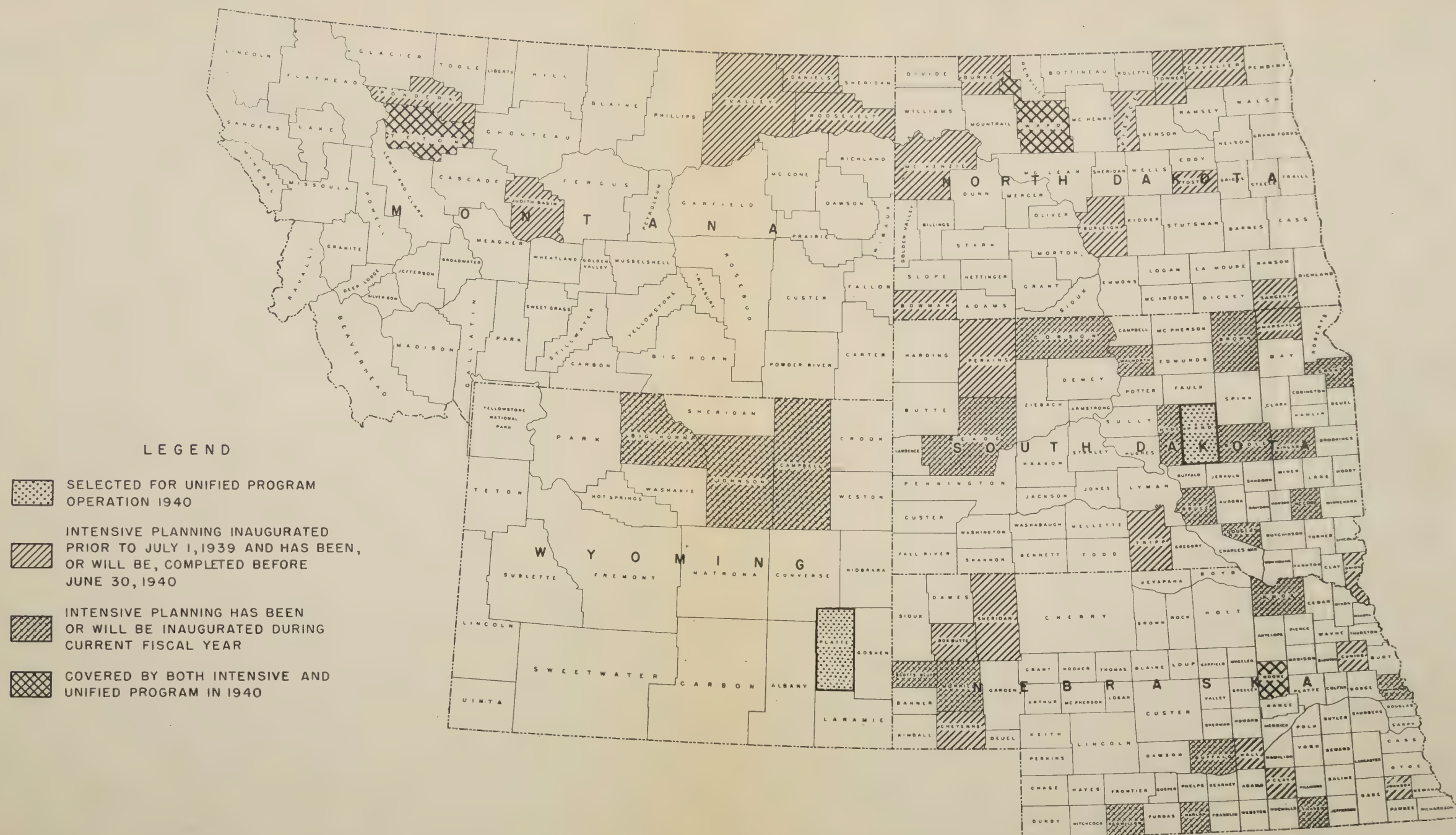
The following table will indicate those counties in the Northern Great Plains States which are pursuing or which plan to pursue work of this nature during the fiscal year 1939-40. For location of these counties see the following map. Additional intensive counties will be added to this list from time to time.

State	Unified		Intensive Planning Counties	
	Program		Inaugurated prior	
	Counties		to July 1, 1939	
			or to be inaugurated prior to July 1, 1940	
<u>Montana</u>	Teton		Teton, Daniels,	
			Judith Basin,	
			Pondera, Roose-	
			velt, & Valley	
<u>Nebraska</u>	Boone		Boone, Cuming,	Scotts Bluff, Morrill, Redwillow,
			Johnson, Clay,	Buffalo, Harlan, Thayer, Knox,
			Hall, Sheridan,	and Washington
			Box Butte, &	
			Cheyenne	
<u>North Dakota</u>	Ward		McKenzie, Burke,	
			Ward, Peirce, Tow-	
			ner, Cavalier, Sar-	
			gent, Foster,	
			Burleigh, & Bowman	
<u>South Dakota</u>	Hand		Perkins, Marshall,	Beadle, Brule, Brown, Corson,
			Tripp, & Union	Douglas, Grant, Hyde, Kingsbury,
				Meade, McCook, and Walworth
<u>Wyoming</u>	Platte			Big Horn, Johnson, & Campbell

The Division of State and Local Planning of the Bureau of Agricultural Economics can advise as to the degree of progress attained in this work in each of the counties mentioned and can indicate where these data may be consulted. A digest of the outline from which this work is done and which will indicate the character of information being made available in this program is reproduced on the following pages.



# COUNTIES IN THE NORTHERN GREAT PLAINS STATES SELECTED FOR INTENSIVE AND UNIFIED PROGRAM PLANNING, 1939-1940





## DIGEST OF COUNTY LAND USE PLANNING WORK OUTLINE NO. 1

(Indicating the character of information being developed by county agricultural land use planning committees under the intensive phases of their program.)

### PART I - MAPPING PHASE

Step 1 - Identification and delineation of land use areas on basis of:

#### A. Main physical features of the area

1. Soils, i.e., clay, sand, loam, sandy loam, muck, etc.
2. Topography, i.e., mountainous, hilly, rolling, flat uplands and lowlands, etc.
3. Climate, i.e., length of growing season, precipitation, existence of frost belts, hail belts, etc.

#### B. Present land use and types and systems of farming

1. Arable farming areas vs. non-arable areas.
2. Livestock farms or privately owned ranch areas vs. "open range," "free range," or "community pasture" areas.
3. Range areas subdivided as to winter, spring, summer, and fall ranges.
4. Type of farming, i.e., cash grain, general livestock, dairy, cattle and cash grain, dairy and hog, etc.
5. Irrigated areas of different types as to source of water.
6. Forest and recreational areas.
7. Summer residence areas.
8. Waste or abandoned land.

#### C. Land use problems - conditions re: land use which are

1. Causing waste or loss of land resources.
2. Providing incomes to operators inadequate to maintain acceptable living standards.
3. Creating hazardous, dangerous, or unhealthful conditions of occupancy.
4. Causing decadence of desirable community institutions.
5. Causing inefficient or wasteful use of public funds.
6. Causing other inefficiencies in the use of land, such as, unsatisfactory systems of tenure, etc.

Step 2 - Describing the main features and problems of each area

#### A. Brief description of physical and land use characteristics of each area - fairly complete for first area in a county or community with variations recorded for subsequent listed areas.

#### B. Special types of descriptive information.

1. Farming areas - percent of land area in farms, percent in cultivation, etc.





2. Part-time farming areas - sources of supplementary income, trends, etc.
3. Flood damage areas - nature of, seriousness of, etc.
4. High tenancy areas - types of leasing system, etc.
5. Range areas - carrying capacity, mode of operation, joint uses, etc.
6. Timber or woodland areas - public or private, etc.
7. Other special areas.

## PART II - CLASSIFICATION PHASE

Step 1 - Arrive at conclusions as to the suitability for farming purposes of each area previously delineated.

Step 2 - Indicate major classes of suitability by coloring areas on map with designated key colors as follows:

### A. Areas not now in farms which are

1. (Class B) Not suited for farming (color green).
  - a. Sub-classes as appropriate, designated by symbols.
2. (Class D) Suitable for farming (color orange).
  - a. Sub-classes as appropriate, designated by symbols.

### B. Areas now in farms

1. (Class A) Not suited to farming and in which lands should be put to other uses (color blue).
  - a. Sub-classes as appropriate, designated by symbols.
2. (Class C) Which are questionable as being suited for farming (color red).
3. (Class E) Which should remain in farming (color yellow).
  - a. Sub-classes as appropriate, designated by symbols.

C. Restoration lands - special classification indicating lands which should be designated as "restoration land" under the AAA program.

## PART III - RECOMMENDATION PHASE

Develop recommendations and estimates for each land class or subclass area, supplying information on each of the following items.

### Class A Areas (land now in farms, but not suited to farming)

1. What percentage of such areas are now in arable farms?
2. What use should be made of the area, with explanation as to nature of the adjustments needed.
3. What specific things can the various public programs do?  
How rapidly can adjustments be made?

4. Should any part of the area be planted to trees? For what purpose?
5. Should any part of the area be seeded to grass?
6. Would any part of the area be suited to rural residences, if opportunities for work in forests or parks were developed?

Class B Areas (land not now in farms and not suited for farming)

1. Explain why area should not be used for farming and also what is the most desirable use.
2. Suggest measures or devices to assure that area will not be farmed and will be used for what is most desirable.
3. Should any part of the area be planted to trees?
4. Would any part of the area be suited to rural residences, if opportunities for work in forests or parks were developed?
5. What is the condition, carrying capacity, etc., of areas now in grazing or livestock ranches?

Class C Areas (land now in farms which is questionable as being suitable for farming)

Supply the information necessary to provide a clear understanding as to the reasons for placing the area in this class, such as insufficient facts, uncertainty of conditions, etc.

Class D Areas (land not now in farms, but which is suitable for farming)

1. Does land need to be drained, cleared, terraced, made accessible, etc.?
2. What type of farming would seem most likely to succeed? Why?
3. Under what conditions do you think the area would be profitably developed for farming, for example:
  - a. If present dependable sources of non-farm work could be assured.
  - b. If large-scale, low-cost drainage operations are used to permit development.
  - c. If costs factors, such as lime, phosphate, etc., were reduced.
  - d. If settlement can be made without too great costs for providing roads and schools.
  - e. If increased demand for the products may be expected to justify its development.

Class E Areas (land now in farms which should remain in farming)

- 1/ 1. The percentage of cropland now cultivated which should continue to be cultivated under a satisfactory soil-conservation and land-use program.
- 1/ 2. Percentage of cultivated acreage that should be in
  - a. Intertilled crops.
  - b. Small grains.
  - c. Grasses, legumes, and hay crops.
3. Percentage of cultivated acreage on which specified soil conserving practices should be conducted.
  - a. Establishing permanent pasture or reforesting.
  - b. Terracing.
  - c. Contour cultivation.
  - d. Applying limestone.
  - e. Applying phosphates.
  - f. Strip cropping.
  - g. Green manure crops.
  - h. Winter cover crops.
  - i. Other practices.
4. Percentage of pasture land on which specified pasture improvement practices should be conducted.
  - a. Reforesting.
  - b. Fertilization.
  - c. Reseeding or sodding.
  - d. Terracing and contour furrowing.
  - e. Brush removal.
  - f. Other practices.
5. Percentage of woodland on which specified woodlot management practices should be conducted.
  - a. Fencing.
  - b. Thinning.
  - c. Planting desirable species.
  - d. Other practices.
6. In areas where tenancy is important, a description should be given of the tenancy situation and problems and recommendations made as to desirable adjustments needed to improve the conditions.

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1/ Items 1 and 2 may be obtained for the county as a whole without considering each area of the county separately, unless this seems desirable.

7. Recommendations as to the minimum-sized family farm of the type or types adapted to each area, which will supply a fair family living to farmers of average ability and permit conservation practices. The estimates should be expressed in acres, and number of livestock for each predominant type of farming.
8. In those counties for which restoration land maps are prepared, the committee should supply an estimate of the total cultivated acreage in each area which they have designated as restoration land. They also should explain what criteria were used in selecting restoration land, and if possible indicate how this class of land can be identified in their particular locality. If crop yields were used as the basis they should indicate for specific crops, the yields which were adopted as the standards.



REPORTS OF THE WATER UTILIZATION SECTION, DIVISION OF LAND ECONOMICS,  
BUREAU OF AGRICULTURAL ECONOMICS

The accompanying tabulation lists the reports of the Water Utilization Section, Division of Land Economics, which relate to specific watersheds in Northern Great Plains States. For location of the areas covered by these reports see the following map.

These studies have been appraised as to the degree of definiteness with which they answer the following questions which carry the same numbers as indicated in the table.

1. The best type or types of land utilization.
2. The size, or range in size, of operating units requisite for carrying on the type or types of land utilization determined upon.
3. The optimum population capacity on the basis of (1) and (2).
4. The redistribution in population, if any, called for by the findings with respect to (1), (2), and (3).
5. The governmental and other measures necessary to carry out the readjustments found to be needed in land use and in the distribution of population.

Projects have been divided into four groups: (a) Report released, (b) report being approved for release, (c) work in progress, and (d) area authorized for study.

Reports on Land and Water Utilization in the Northern  
Great Plains States

Prepared By  
The Water Utilization Section  
Division of Land Economics  
Bureau of Agricultural Economics

MONTANA

Name of Watershed	Counties Involved	Status	Nature of Information Available on Questions: 1/									
			1	2	3	4	5	6	7	8	9	10
1. Upper Clear, Upper Seven: Mile, Deer, Morgan, Thirteen Mile, and Burns: Creeks	Northern Dawson	Mimeo. June 1939	S	S	S	S	S	S	S	S	S	S
2. Little Beaver River	Carter and Fallon	Mimeo. Aug. 1939	S	S	S	S	S	S	S	S	S	S
3. Teton River Subarea 1	Teton, Pondera and Chouteau	Being ap- proved for release	G	G	N	N	N	N	N	N	N	G
4. Bitterroot Valley	Ravalli and Missoula	In Progress										

1/ Questions corresponding to numbers in table are (1) best type of land use, (2) best size of operating unit, (3) optimum population capacity, (4) present population compared to optimum, and (5) needed measures of adjustment. S - Specific Information, G - General Information, and N - No Information.

Continued

# NEBRASKA

Name of Watershed	Counties Involved	Status	Nature of Information Available on Questions: 1/				
			1	2	3	4	5
1. Republican River Subarea 1	Nuckolls, Webster, Franklin, Furnas, Harlan and Red Willow	Mimeo. July 1939	S	S	N	N	S
2. Remainder of Republican River	Perkins, Lincoln, Chase, Hayes, Frontier, Gosper, Phelps, Kearney, Dundy, Hitchcock, Red Willow, Furnas, Harlan, Frank- lin, Webster and Nuckolls	In Progress					

1/ questions corresponding to numbers in table are (1) best type of land use, (2) best size of operating unit, (3) optimum population capacity, (4) present population compared to optimum, and (5) needed measures of adjustment. S - Specific Information, G - General Information, and N - No Information.

Continued

NORTH DAKOTA

Name of Watershed	Counties Involved	Status	Nature of Information Available on Questions: 1/				
			1	2	3	4	5
1. Upper Cannon Ball River	Slope and Hettinger	Mimeo. April 1939	S	S	S	S	S
2. Little Muddy River	Williams and Divide	Being approved for release	S	S	S	S	S
3. Upper Heart and Green River Segment, Heart River Basin	Billings and Stark	Field work completed					
4. Horse Creek, Sand Creek, Timber Creek, Tobacco Garden Creek, Cherry Creek and Charbonneau Creek	McKenzie	Field work in progress					
5. Remainder of Heart River	Billings, Morton, Stark, Grant and Hettinger	Authorized for study					

1/ Questions corresponding to numbers in table are (1) best type of land use, (2) best size of operating unit, (3) optimum population capacity, (4) present population compared to optimum, and (5) needed measures of adjustments. S - Specific Information, G - General Information, and N - No Information.

Continued



SOUTH DAKOTA

Name of Watershed	Counties Involved	Status	Nature of Information Available on Questions: 1/				
			1	2	3	4	5
1. North portion Cherry-Sulphur Creeks	Butte, Perkins, Meade and Ziebach	Mimeo. March 1939	S	S	S	S	S
2. Crow Creek	Buffalo, Hyde, Hand, Jerault, Aurora and Brule	Being approved for re-lease	S	S	N	N	S
3. Rabbit and Thunder Butte Creeks, Segment of Moreau River	Harding, Perkins and Ziebach	Being approved for re-lease	N	N	N	N	N
4. Balance of Moreau River	Harding, Butte, Meade, Perkins, Ziebach and Dewey	Authorized for study					
5. South portion of Cherry-Sulphur Creeks	Butte, Meade and Ziebach	Authorized for study					
6. Bad River	Haakon, Stanley, Jones, Pennington and Jackson	Authorized for study					

1/ Questions corresponding to numbers in table are (1) best type of land use, (2) best size of operating unit, (3) optimum population capacity, (4) present population compared to optimum, and (5) needed measures of adjustment. S - Specific Information, G - General Information, and N - No Information.

Continued

WYOMING

Name of Watershed	Counties Involved	Status	Nature of Information Available on Questions: 1/				
			1	2	3	4	5
1. Riveton Project (Wind River Watershed)	Fremont	Completed Dec. 1938 (Typewritten)	N	N	N	N	S
2. Gillette Subarea Little Powder River	Campbell	Mimeo. July 1938	S	S	N	N	S
3. Pope Agie Drainage Basin	Fremont	Mimeo. July 1939	S	G	N	N	S
4. Star Valley of the Salt River	Lincoln	Being approved: for release	:	:	:	:	:
5. Remainder of Little Powder River	Campbell	Field work well advanced	:	:	:	:	:
6. Gooseberry Creek	Parks, Hot Springs and Washakie	Authorized for study	:	:	:	:	:
7. Crazy Woman Creek	Johnson	Authorized for study	:	:	:	:	:
8. Smiths and Black Forks Creeks	Uinta	Authorized for study	:	:	:	:	:

1/ Questions corresponding to numbers in table are (1) best type of land use, (2) best size of operating unit, (3) optimum population capacity, (4) present population compared to optimum, and (5) needed measures of adjustment. S - Specific Information, G - General Information, and N - No Information.

INTERSTATE

Name of Watershed	Counties Involved	Status	Nature of Information Available on Questions				
			1	2	3	4	5
1. Hat Creek	Sioux County, Neb. Fall River County, S. D.	Field work well advanced					
2. Niobrara River	Nebraska Counties - Knox, Antelope, Holt, Boyd, Keyapaha, Rock, Brown, Cherry, Sheridan, Box Butte, Daws, Sioux, South Dakota Counties - Gregory, Tripp, Todd, Bennett. Wyoming Counties - Niobrara, Goshen.	Authorized for study					
3. Oak Creek	Sioux County, N. D. Carson County, S. D.	Authorized for Study					
4. Teton River Drainage	Teton County, Wyoming Teton County, Idaho	Field work well advanced					
5. Lodge Pole Creek	Kimball County, Neb. Deuel " " Cheyenne " " Albany " " Laramie " "	In Progress					
6. Red Water River	Lawrence " S. D. Butte " S. D. Crook " Wyoming Weston " "	Authorized for Study					





JANUARY 1, 1940

- A** REPORT RELEASED
- B** REPORT BEING APPROVED FOR RELEASE
- C** WORK IN PROGRESS
- D** AREA AUTHORIZED FOR STUDY



EXPLANATORY NOTE RELATIVE TO DEPARTMENTAL INVESTIGATIONS UNDER THE  
FLOOD CONTROL ACT OF 1936 (AS AMENDED) IN THE NORTHERN GREAT  
PLAINS STATES IN CORRELATION WITH THE WAR DEPARTMENT

Under the complementary provisions of the Flood Control Act of 1936, Congress has charged the Secretary of War and the Secretary of Agriculture with the joint task of developing in common a program of protection from floods menacing the national welfare and affecting lives and social security. To accomplish this protection as effectively as possible, there has been delegated to the War Department the control of the flood waters in the major channels of designated watersheds, and to the Department of Agriculture the auxiliary control of the storm surface run-off of the tributary headwaters.

Preliminary examinations and surveys are undertaken by each Department to determine the necessity for flood control measures. The following portion of the work outline from which these reports were prepared will indicate the bearing they may have on the relation of population to resources in the Northern Great Plains States:

"Occupancy and Economy:

Give a brief summary of the chief facts pertaining to the occupancy and economy of the watershed as related to floods, such as: population; land ownership and use; land cover; land economy; land management; water economy; and institutional problems."

These reports are not available for public distribution until reviewed and approved by the Secretary of Agriculture. The following preliminary examinations have been completed or are under way:

<u>Watershed</u>	<u>Status</u>
<u>MONTANA</u>	
Yellowstone River	Completed
<u>WYOMING</u>	
Belle Fourche River	Completed
Big Horn River	Completed
North Platte River	Completed
Powder River	Completed
<u>NORTH DAKOTA</u>	
Pembina River	In progress
Souris River	Completed

<u>Watershed</u>	<u>Status</u>
<u>SOUTH DAKOTA</u>	
None	
<u>NEBRASKA</u>	
Big Blue River, Nebraska and Kansas	Completed
South Platte River, vicinity of Schuyler	In progress
Republican River	In progress

Intensive surveys are undertaken in watersheds where the preliminary examinations indicate that a flood control program is justified under the measures authorized to be carried out by the Department of Agriculture. These surveys are much more comprehensive and, as a consequence, are likely to be more specific on the relation of population to resources than are the preliminary reports. As yet no intensive surveys have been undertaken in the Northern Great Plains States.



REPORTS PREPARED BY THE PUBLIC FINANCE SECTION  
DIVISION OF LAND ECONOMICS  
BUREAU OF AGRICULTURAL ECONOMICS

I. Reports prepared in response to Field Instructions LU-38 and LU-38,  
Supplement 1. (Digests of which are attached)

These reports analyze the effects of the land purchase program upon local government, reveal problems of local government and finance related to land use problems, and offer suggestions as to needed measures of institutional adjustment to changing land and population patterns. No studies now in progress. For location of areas covered by Reports of the Public Finance Section see following map.

Completed reports in the Northern Great Plains area are as follows:

A. In Response to Field Instruction LU-38.

Title		:	Availability	
(indicating location)		:		
1.	Effects of Project LA-MT-2 on the Property Tax System of Valley County, Montana	:	Unpublished. Typed copies in office of Public Finance Section	
2.	Effect of LA-MT-2 on Blaine County, Montana	:	"	
3.	Effect of LA-MT-2 on Phillips County, Montana	:	"	
4.	Public Finance Aspects of Pine Ridge Land Use Readjustment Project, Nebraska (LA-NB-1)	:	"	
5.	Preliminary Report on Little Moreau Game Refuge, South Dakota, (LA-SD-4)	:	"	
6.	Preliminary Report on Fort Sully Game Refuge, South Dakota, (LA-SD-5)	:	"	
7.	Public Finance Aspects of Milk River Land Acquisition Project (LA-MT-2), Phillips County, Montana	:	Published. Land Use Planning Publication 18a.	
8.	Preliminary Report on Public Finance Aspects of Cheyenne River Project, North Dakota, (LA-ND-6)	:	Unpublished. Typed copies in office of Public Finance Section	

(2) Completed studies (continued):

A. In Response to Field Instruction LU-38.

Title (indicating location)	Availability
9. Public Finance Problems of Bad Lands Fall River Land Use Adjustment Project, South Dakota. (LA-SD-1)	: Unpublished. Typed : copies in office of : Public Finance Section
10. General Framework of Law and Procedure in which Local Government Operates in Montana	: Published. Land Use Plan- : ning Publication 18b.
11. General Framework of Local Government in Nebraska	: Unpublished. Typed copies : in office of Public : Finance Section
12. General Framework of Local Government in North Dakota.	: " "

- - - - -

B. In Response to LU-38 (Supplement 1):

Survey of Indebtedness of Local Taxing Units for the  
following LU Projects.

1. LA-Mont.-3
2. LA-Mont.-4
3. LA-Nebr.-1
4. LA-N.Dak.-1
5. LA-N.Dak.-2
6. LA-N.Dak.-6
7. LA-S.Dak.-1
8. LA-S.Dak.-2
9. LA-Wyo.-1

II. Other Studies

- A. "Land Use Adjustments and County Fiscal Problems in Billings  
County, North Dakota." Now in process of publication  
(Washington). A detailed plan of local governmental read-  
justment for Billings County in face of land use problems  
and land use adjustment measures in operation.

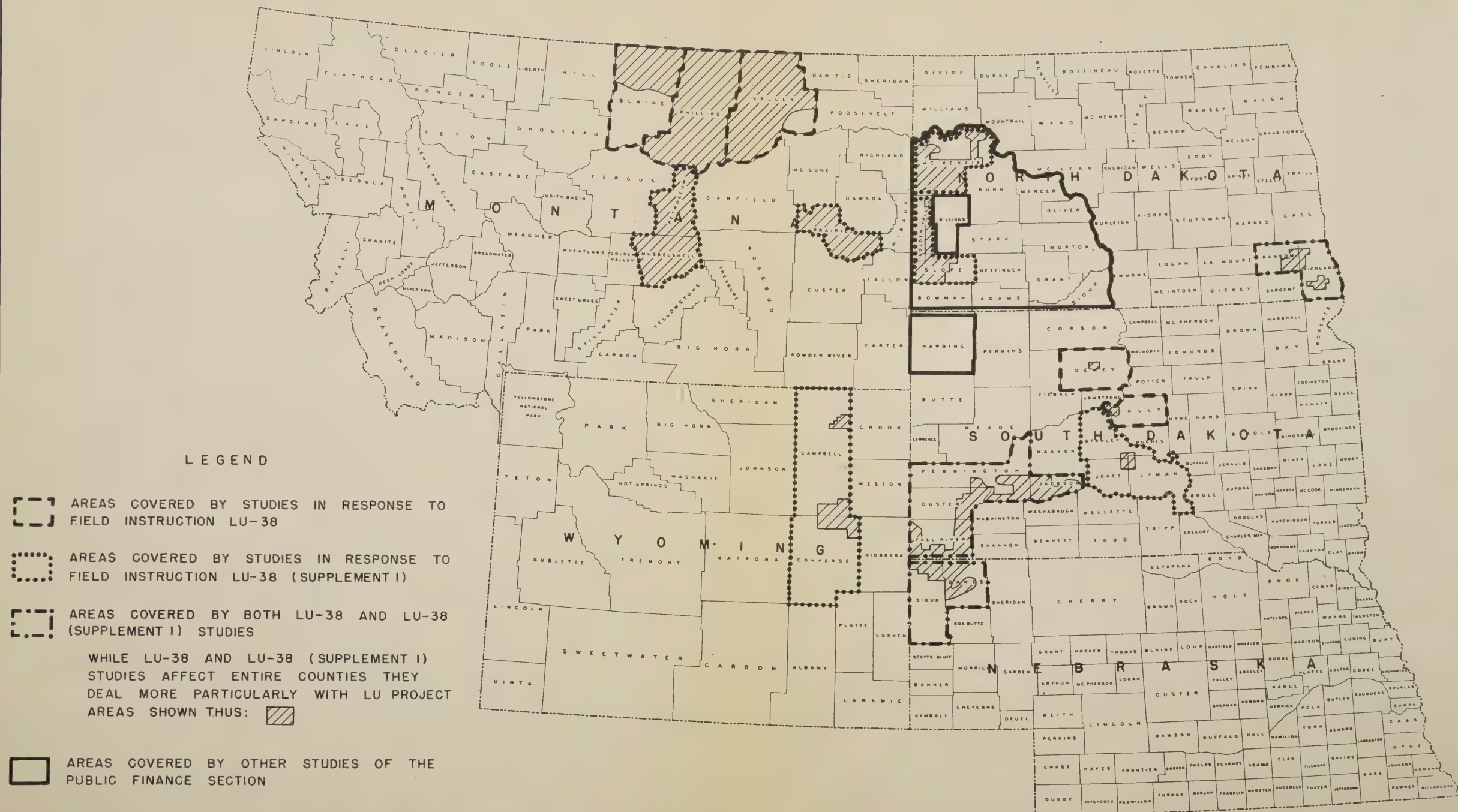
II. Other Studies (continued):

- B. "Tax Delinquency in S. W. North Dakota." In process of revision for publication by State College. A Survey of extent of tax delinquency, tax reversion procedure, and best use of tax reverted land.
- C. "Block System of Leasing County Lands in Harding County, South Dakota" and "Suggested South Dakota County Land Administration Act." Unpublished--Lincoln office of Division of Land Economics.
- D. "Reorganization of School District Government in Montana." Unpublished;--copies in office of Public Finance Unit. Needed institutional adjustments to land use pattern.
- E. "Farm Real Estate Taxation Procedure in North Dakota." Published---Experiment Station and U.S.D.A. (B.A.E.) 1939. Background material in tax administration and reversion.





# AREAS IN THE NORTHERN GREAT PLAINS STATES COVERED BY STUDIES OF THE PUBLIC FINANCE SECTION \*





## DIGEST OF FIELD INSTRUCTION LU-38

The primary consideration of these reports was to determine the effects of the purchase program on the tax base, revenues, expenditures, tax rates, debt, tax delinquency, pattern of settlement, state aid, and possible reorganization or consolidation of the various local governmental units covered by the project. The reports in general were similar, varying only as to detail where particular problems existed and were emphasized, and contained the following material:

- I. General nature of the area as indicated by extent and character of the purchase area, proposed new use, number of families involved, and broad effects of possible reorganization on revenues and expenditures.
- II. General framework of law and procedure within which the local governmental units operate such as: division of functions between the state and local units; principles of operation of various state aid provisions; organization of local units such as number and type, officers, their functions and salaries, and rules for reorganizing or dissolution of the various units; financial activities such as, expenditures by purpose, statutory requirements on debt, budgets, minimum tax to qualify for state aid, and tax rates; participation of the various units in the tax revenues, both current and delinquent collections; tax delinquency procedure, both the law and the extent to which it is followed.
- III. A determination of the fiscal condition, basis of support, and types of revenue and expenditure of local units prior to the inauguration of the purchase program. This involved a study of the size and composition of the tax base for each unit, the extent of tax delinquency, sources and amounts of revenue in relation to expenditures, including state-aid receipts, an analysis of the debt situation, a summary of fiscal conditions, past and prospective, of the local units, and cost of government in the area in relation to land utilization.
- IV. Results of the purchase program on provision of services, revenues, and expenditures. This involves a study of both the physical and fiscal requirements for such items as roads, schools, relief; changes in the tax base; changes in revenue involving collections and delinquency, state aid and changes in the cost of selected services such as schools, roads, relief, and other service functions.
- V. A summary of all the effects under IV above.

- VI. A summary of the adjustments in the organization of local units that could beneficially be made as a result of the purchase program.
- VII. A summary of present laws and procedure that encourage or retard reorganization of local governmental units.
- VIII. A summary of needed legislation to grant authority for desirable adjustments in local government.

#### DIGEST OF FIELD INSTRUCTION LU-38 (SUPPLEMENT I)

The object of each of these studies was to determine, on the basis of the assessed valuation, the amount of the outstanding public debt of each local governmental unit that could be assigned to the assessed valuation purchased and to determine the amount of delinquent taxes that would be collected by the units as a result of the purchase program. Details were secured on the assessment of each governmental unit, the assessment purchased, tax rates - total and for debt service, tax delinquency of lands purchased, and an analysis of the debt situation such as amount of debt bonded and floating, defaults of principal and interest, sinking funds, adequacy of debt service levies, purpose of debt, interest rates, and maturity dates.

Observations were also made on the desirability of compensation to particular local units on debt account due to size of debt, valuation purchased or delinquent taxes on properties purchased.



LU-30 REPORTS OF  
THE LAND CLASSIFICATION SECTION, DIVISION OF LAND ECONOMICS,  
BUREAU OF AGRICULTURAL ECONOMICS

1. Nature of Research - The LU-30 reports were designed essentially to be continuations and refinements of the A-13 reports prepared by the state Land Use Planning consultants. The nature of the contents of these reports may be understood by reference to Field Instruction LU-30, issued January 17, 1936, by the Resettlement Administration, a digest of which follows. This Field Instruction requested information concerning the number and location of arable farms which should be replaced by forestry, grazing, recreational or other conservational uses, the location of areas in which 20 per cent or more of the farms were too small to permit economic production, conservational practices, and similar information. Implicit in this request was information concerning the best types of land use and needed measures of adjustment.

Reports and maps on the basis of Field Instruction LU-30 were prepared during 1936-37. Subsequent to preparation of the original LU-30 reports a few of the field offices revised the data and modified the maps. The criteria suggested in the LU-30 instruction needed, of course, to be adapted to State and local conditions, and were accordingly variously interpreted in different geographic parts of the country. Criteria in some areas, moreover, were more fully developed than those in other areas. The information was requested primarily for use in planning for the land acquisition program and needed, therefore, to be transmitted rather promptly. Consequently, the information was based largely upon materials readily available in the field offices and in the State Colleges and Experiment Stations, and upon judgments of professional scholars and local farm people. While the reports have their limitations with respect to strict comparability, they are, nevertheless, useful for general comparative purposes.

2. Location of Completed Studies - LU-30 reports for the Northern Great Plains including Montana, Nebraska, North Dakota, South Dakota, and Wyoming are on file in the Land Classification Section of the Division of Land Economics, Bureau of Agricultural Economics, Washington, D. C.

3. Location of Studies in Progress - None of these LU-30 studies is now in progress. The studies were completed in 1936-37. No new version of them or a supplement to them has been requested.

4. Availability of Studies - These studies have not been published. They are available to workers in the Department but are not available for public use.

Note: Since these studies are State-wide in scope, no map of their location has been prepared.

DIGEST OF  
FIELD INSTRUCTION LU 30

The Instruction was issued to Regional directors, chiefs of regional Land Use Planning Sections, and State Land Use Planning Specialists.

The reports called for in this Instruction were to be essentially continuations and refinements of the A-13 reports prepared in 1935 by the State Land Planning Consultants of the National Resources Board. The work requested consisted particularly "in delimiting areas which should shift from crop farms to ranches or forests, in determining areas where enlargement or consolidation of farms should be recommended, in the selection of areas suitable for new or closer settlement, and in estimating the effect on production of specific crops and livestock, of replacing crop farms by ranches or forests." In preparing this information the Land Use Planning Specialists were to work in close cooperation with the state colleges and agricultural experiment stations.

The following outline will indicate the particular information requested:

1. Location of all areas in which all or part of the farms are:
  - (a) Arable farms which should be replaced by stock ranches or grazing districts;
  - (b) Arable farms which should be replaced by forests;
  - (c) Arable farms which should be replaced by types of properties other than those named in 1a or b of this Instruction, for example, parks, wild life refuges;
  - (d) Stock ranches and/or farms used mainly for residence, which should be replaced by grazing districts, forests, or other non-farm properties.
2. An estimate, by areas and minor civil divisions, of the number of farms in each of classes 1a, 1b, 1c, and 1d.
3. An estimate, by areas, of the acreage in farms in each of classes 1a, 1b, 1c, and 1d.

4. An estimate, by areas, of the decrease in the acreage of crop land (including fallow), and in the acreage of each important crop that would result from the replacement of farms as proposed. (Express estimates of change in acreage and production as change from numbers existing in 1935.)
5. An estimate, by areas, of the net change in the acreage of open pasture that would result from the replacement of farms as proposed.
6. An estimate, by areas, of the net change in the number of each important class of livestock that would result from the replacement of farms as proposed.
7. An estimate for each area of class 1a of the net change in the number of operating units that would result from the replacement of arable farms by stock ranches as proposed.
8. An estimate, by areas, of the increase in the acreage of forest and/or woodland that would result from the replacement of farms as proposed.
9. Location of all areas in which 20 per cent or more of the farms are too small to permit practices or land uses which will prevent soil depletion and/or provide an adequate family living, and hence in which some adjustment in size of farms is desirable.
10. An estimate, by areas, of the number of farm units that would be displaced by the process of enlargement of farms that is proposed.
11. Location and description of areas suitable for new or closer settlement, following the outline of procedure in Bulletin A-13 of the National Resources Board:
  - (a) Areas where the land suitable for settlement is now in farms;
  - (b) Areas where the land suitable for settlement is not now in farms.









